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ORIGINAL ARTICLES.

SYSTEMATIC EXAMINATION FOR RECTAL DISEASE.¹

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THERE is no way by which the different diseases of the rectum can be diagnosed except by careful and thorough examination, and this in the large majority of cases can be made without the use of any instruments, and almost without pain to the patient.

When patients consult me I always encourage them to tell their own story in their own way, and usually they will give some salient points on which I can base my questions, though these points are frequently mixed up with irrelevant information.

The statement of a patient as to rectal disease may be very useful as a guide to the direction in which one should inquire further and search for lesions, but for diagnostic purposes it cannot be depended upon. In four cases out of five, the patient says he has piles. Very possibly he has. He may or may not, and he may have much more. If the surgeon simply takes the patient's word for it, and prescribes compound gall ointment, as is very frequently done, without making any examination, he has only himself to thank if his patient is not benefited, and goes to a quack for treatment. The fact of rectal disease being so largely in the hands of quacks is often because physicians habitually treat cases without a full examination, and therefore without a diagnosis, followed by a consequent failure to cure. The public has somehow got the idea that the regular profession can do little for rectal diseases, and so they naturally go to men who advertise their ability to cure. Most of the cases of carcinoma of the rectum that I have seen had been for several months treated for piles, without a digital examination having been made. Under such circumstances, failure to examine seems almost criminal.

After getting the patient's own account, I begin to question. How long has he suffered? The answer may throw much light on the case. If only *quite* recently, a thrombotic pile, abscess, or acutely inflamed internal piles that have hitherto escaped notice,

may be looked for, or a recent fissure, or a polypus that has just come within the grasp of the sphincter, and that previously gave no trouble. Old internal piles may last indefinitely, as may fistulæ, though they usually tend to get worse before the patient seeks relief. Ulceration and stricture are usually of long standing, while carcinoma is, as a rule, discovered within a few months of its appearance, though its nature may not be understood until far too late for its removal with any hope of cure. Most patients put off seeking advice for rectal troubles till their condition is intolerable.

I then ask: "Is there pain?" Let the patient describe it. "Is it connected with the act of defecation?" "Is it acute, excruciating, or a dull, heavy ache?" "Is it constant or occasional?" "Where is it situated?"

The most acute pain is found in association with fissures and with ulceration situated within the grasp of the sphincter, and is aggravated or caused by defecation. A fissure may confidently be looked for when there is very acute pain always coming on with or shortly after a movement of the bowels, and lasting for half an hour or for several hours.

The pain of ulceration varies greatly according to the position of the ulcers, those situated high up being much less painful than those constantly irritated by the action of the sphincters, low down, near the anus—probably the most sensitive part of the body.

Some simple ulcers occasion but little pain, and syphilitic ulcers are, as a rule, much less painful than the tuberculous ulcers, which are probably the most painful of any, and the most difficult to cure.

Fistula may occasion much pain if the internal orifice is large and the external one small, or if the skin is much undermined; but if the external opening is large enough to allow of free drainage, and is kept open, the pain is slight.

Uncomplicated internal piles rarely give rise to much pain, unless they prolapse, when there may be considerable. Inflamed external piles and the thrombotic external piles caused by the rupture of a vein at the anal margin, cause a good deal of pain, with dull, heavy aching and throbbing, much like the pain of abscess, but less severe.

The pain of coccydynia is spasmodic, usually attacking the patient when attempting to rise from a sitting posture. Some of these cases are, purely neuralgic, while the worst ones are due to caries of

¹ Read before the Denver Medical Association and Arapahoe County Medical Society, October 13, 1891.

the coccyx, or to disease of the sacro-coccygeal articulation.

Very frequently I have examined patients who complained of pain in the rectum or about it, and who were firmly convinced that they had some rectal disease, but in whom the rectum and anus were entirely free from any discoverable lesion. In such cases the cause may usually be found in some neighboring organ, the pain being reflex. Urethral stricture, stone or tumors of the bladder, and enlarged prostate in the male, or an enlarged and misplaced uterus, with the fundus or cervix pressing abnormally on the rectum, or a prolapsed ovary, in the female, may cause these pains, as may also any pelvic tumor.

Then, again, in severe ulceration and in carcinoma of the rectum, pain is frequently felt down the legs, especially the left, and this may be the first symptom that causes the patient to seek advice. Old-standing prolapsing piles are sometimes accompanied by constant backache. A patient on whom I operated lately told me a few days after the operation that he was then free from backache for the first time in five years.

To return to our questions. Is there any bleeding? If so, is it constant or occasional, slight or profuse—or merely a streak of blood in the feces?

Internal piles are by far the commonest cause of rectal bleeding, especially if profuse and occurring with every, or nearly every, movement of the bowels. Hemorrhage occurs also in association with carcinoma when it has reached the stage of ulceration, and with polypi, which are the usual cause of rectal hemorrhage in children. It is astonishing what an amount of blood may be lost daily from a very small pile, or a little warty polypoid growth not larger than a pea. The bleeding from non-malignant ulceration and from fissure is much less profuse—in fissure frequently merely a streak of blood in the feces. In ulceration and in some polypoid growths, there is often a discharge of dark blood, mixed with mucus, early in the morning, and in bad cases recurring at intervals during the day, while fecal discharges may be quite free from blood.

Dysentery must, of course, be remembered, and also vicarious menstruation, which occasionally, though rarely, occurs from the rectum.

Does anything protrude from the rectum during defecation? Does it return itself, or can it be returned, and if so, will it stay up?

External piles are usually described as coming down from inside the anus, but they cannot be put back and kept in. Internal piles, carcinomatous and other tumors, polypi and small polypoid growths, may all prolapse. In procidentia there may be merely a small prolapse of the mucous membrane or an im-

mense mass protruding, in some cases as large as a child's head, and involving all the coats of the intestine. In these severe cases of procidentia, a hernia should always be looked for (it lies on the anterior aspect of the bowel), and if present is a serious complication.

The causes of procidentia must be carefully searched for. It is often due to polypus, sometimes to piles, and if so may be entirely relieved when the cause is removed. In a case I saw recently there was an epithelioma of the posterior rectal wall, which, however, was probably secondary to the procidentia and caused by the irritation of the exposed membrane.

Is there any discharge from the rectum? is another question I usually ask.

A discharge of mucus, with or without pus and blood, is pretty constant in association with ulceration, and often accompanies old internal piles. It may result from polypus and small polypoid growths, and some may be found in connection with a catarrhal condition of the colon. There is much discharge in the later stages of carcinoma, and there is some with fistula.

An exudation from and around the anus usually accompanies pruritus, and is often due to eczema. It is especially marked at night when the patient gets warm in bed, and then the itching usually becomes intense. Itching, by the way, does not always mean pruritus, but is sometimes the first premonitory symptom of the formation of an abscess, often a deep one.

I never fail to inquire about the state of the bowels. Many rectal ailments are due to constipation, and are relieved when it is overcome. It must be remembered that diarrhea may accompany an impaction of feces in the rectum or colon, and an enormous load may be found there in spite of the patient's belief that such a thing is impossible because he has had a diarrhea for a week or more.

It is often well to ask if a satisfactory movement is obtained; if the rectum seems to be emptied, or if there is something left that straining does not bring away. This symptom may be found in connection with a polypus, with an internal procidentia or partial intussusception of the rectum, or even with a pile within the grasp of the sphincter. Stricture, of course, causes a difficulty in defecation, and very similar symptoms may be due to an enlarged prostate or to a retroverted and tender uterus.

After questioning the patient I invariably make a physical examination, preferring to have the patient lie on the left side, in the Sims position, and in a good light.

Inspection of the anus may give much information. An abundance of fine silky hair usually denotes a tuberculous patient, with whom any extensive

operation should, if possible, be avoided, and with whom chloroform is to be preferred to ether, for fear of exciting or aggravating a cough, the succussion of which in a rectal wound gives great pain and prevents healing.¹

Note any discoloration, the red blush and swelling of an abscess, or the loss of pigment that occurs in pruritus, leaving the skin at the margin of the anus of a dull-white color. With pruritus there is frequently chronic eczema, and a thickening of the skin, sometimes close to the anus, sometimes an inch or more away from it. The characteristic itching usually becomes worse at night when the patient is warmed in bed. The laity know it as "itching piles." Piles are frequently found with pruritus, and the latter may disappear on the removal of the former. Pruritus may also be dependent upon a fistula, or any other local disease, and such causes (caries is a common one) must be carefully sought for; very frequently, however, pruritus is found in connection with a congested liver and a gouty or lithemic condition, and is aggravated by any excesses in living and by the use of coffee and by smoking.

A glance at the anus tells if there is any kind of external piles and tabs, these being usually the remains of old piles. When these tabs, or cutaneous external piles, as they are often called, are found swollen, shiny, and bathed in a discharge from the anus, they are significant of serious ulceration higher up, usually syphilitic or carcinomatous. Syphilitic sores and vegetations, and warty and other growths, and the scars of previous operations, should be observed.

By feeling around the anus with the pulp of the forefinger the indurated tracks of fistulæ can be traced beneath the skin, and by a little pressure along the track a drop of pus can frequently be made to exude from the orifice, which otherwise may be hardly perceptible. The orifice of an old fistula is frequently soft and pouting, and the discharge thin and watery. Such a fistula can be left for a while without operation with more safety than one discharging thicker pus, as the latter is in an active state and much more liable to burrow further. Careful search should be made in folds of skin and around the bases of tabs for small fistulous openings and fissures that may easily escape detection.

By telling the patient to strain, and at the same time placing the fingers on either side of the anus, and gently but firmly drawing the buttocks apart, nearly half an inch of the anus can be exposed, and fissures, polypoid growths, the openings of fistulæ, and perhaps internal piles, can be seen.

¹ A dry, harsh condition of the skin about the anus, with a number of small cracks or fissures radiating from it, is found in victims of the opium-habit.

In married women, a small portion of the anterior rectal wall can be everted by introducing the forefinger into the vagina and pressing it out of the anus. This is very useful in examining fissures situated anteriorly, or the perineal pile so frequent in women, but except in such cases it is of little use, as only a very small portion of the rectum can be seen in this way.

The forefinger, well anointed with vaseline or some other lubricant, should next be inserted into the anus. The pulp of the finger should be placed on the anus, and the patient told to bear down. As he does so, the sphincter is relaxed and the finger slips in easily, and much pain is avoided. At first, the finger should only go in a very short distance, just passing the external sphincter, and the surface of it should be swept over, as well as the space between the external and internal sphincters. This is the usual site for the openings of fistulæ, which can be detected by the educated finger, feeling sometimes like a dimple, and sometimes pouting and feeling like a gumboil.

If the indurated track of a fistula has been detected externally running posteriorly to a line directly across the center of the anus, the internal opening will be found in about nine cases out of ten in the median line directly posteriorly, no matter where the external orifice may be. It is of the utmost importance, before operating, to find the internal opening, because the sphincter must only be divided at one point, and that point is where the track from the internal opening passes under or through the sphincter.

Fissures rarely extend above the line between the two sphincters. As the finger passes over them, they are easily detected, and their extent ascertained. This space between the two sphincters is also a frequent seat for ulcers, the surface of which has a rough feel. Polypoid growths may be found here, as well as below and above.

The finger may then be passed over and above the internal sphincter, and swept around. Note any enlargement of the prostate, or if the uterus presses abnormally on the rectum, and is tender. Feel for ulcers and the tracks of fistulæ extending high up, the soft, fluctuating bulging of abscess, or any induration and narrowing of the canal by stricture, or by carcinomatous or other tumors. By bending the finger directly posteriorly, the anterior surface of the coccyx can be explored, and any tenderness of it or about the sacro-coccygeal joint detected.

Finally, the finger should be inserted to its full length to ascertain if there is any stricture or growth high up. More length can be gained here by keeping the other finger extended and pressed between the buttocks posteriorly, and should the symptoms call for such a measure, by having the

patient stand on his feet and strain down. Hardened feces are frequently felt at this stage, and may easily be mistaken for a carcinomatous growth. Find if the mass can be indented, and scratch it with the finger-nail. On withdrawing the finger, see if it is smeared with fecal matter, or with mucus, pus, or blood.

If the rectum is found loaded with feces an enema should be given and the patient examined immediately afterward. In some cases the enema is most useful, even if the bowel is empty. By this means a fibroid polypus with a long pedicle may be brought within reach and the finger hooked over the pedicle, when otherwise it may escape detection by returning higher up the bowel. Prolapsing internal piles will also be brought down, and can be inspected.

Internal piles are most difficult to detect by touch alone. The finger must be very well educated to recognize them. They usually lie on or below the internal sphincter, and can be detected by slightly crooking the finger and sweeping it around. In this way the sulci between the piles can be felt and the tumors themselves recognized.

Now, all this can be done by the intelligent use of the finger in the way I have described, and there are very few pathologic conditions of the rectum that, with a minimum of pain to the patient, cannot so be diagnosed. The feeling is all done with the pulp of the last phalanx of the finger, and the mistake that is usually made by the inexperienced examiner is that of inserting the finger at once past the internal sphincter into the rectal pouch, and nothing abnormal being found there, withdrawing it without exploring either above or below. Lesions high up are not reached, and the sensitive part of the finger does not come in contact with those below, or it passes by them too hastily to notice their presence. In the large majority of cases the lesion lies within about an inch of the anus.

In many cases of fissure, and even of ulcer at the sphincter, the finger cannot be introduced without causing great pain. In some of these cases the application to the sore of a solution of cocaine, from 5 per cent. to 20 per cent., on a pledget of cotton, may cause sufficient local anesthesia to permit an examination; but in most cases it will be necessary to administer ether and dilate the sphincters, and so explore thoroughly, being prepared at the same time to do any operation that may be found necessary.

The speculum has but a limited use for purely diagnostic purposes. It is frequently useful in verifying the diagnosis made by the finger, and in searching for the opening of a small blind internal fistula, or for small lacunæ, or "pockets," near the anus, that occasionally give trouble; but its use will

be more and more dispensed with as the surgeon becomes expert with his finger. The speculum often gives great pain, and if opened sufficiently wide for a thorough exploration its employment will frequently require the use of an anesthetic.

The diagnosis of stricture beyond the reach of the finger and in the sigmoid flexure is replete with extreme difficulty, the more so since the inability to pass a full-sized bougie is no evidence that there is a stricture except after repeated trials in skilled hands. I have seen Mr. Herbert Allingham pass his ball-staff into the sigmoid, but I have never succeeded in doing it myself, and Dr. Kelsey speaks of his inability to use the instrument satisfactorily. A bougie will usually be arrested at the promontory of the sacrum, and will also be caught in the folds of the mucous membrane. This may be partially overcome by using the soft rubber bougie, through which water can be injected and the folds drawn out of the way by dilating the intestine, but exploration of this region is always difficult and unsatisfactory.

Occasionally the introduction of the whole hand into the rectum, after the method of Simon, of Heidelberg, may be used to advantage, but it is a procedure full of risk to the patient, several deaths having been recorded from rupture of the intestine. If the symptoms point to stricture high up, and a satisfactory diagnosis cannot be made with bougies, I prefer to make an abdominal exploration, making the incision as in inguinal colotomy. There is little danger in this, and, if necessary, the colotomy can be done at the same time.

A REPORT OF EIGHT ADDITIONAL CASES OF PERINEAL SECTION WITHOUT A GUIDE.¹

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In the spring of 1887 I had the pleasure to read before the Medical and Chirurgical Faculty of Maryland a report of nine cases of perineal section without a guide. The paper was published in *The Annals of Surgery*, in July of the same year. Of these cases the operation was performed in one for old perineal contusion, in five for old gonorrheal stricture, in two for old pelvic fracture and resulting traumatic stricture, and in one for recent pelvic fracture. One of these cases died from carcinoma about a year after operation, and one from tuberculosis six months after operation. The rest, so far as I am informed, with the exception of Case VIII, who has since died of tuberculosis, are still alive and well. Since the publication of my paper I

¹ Read before the Southern Surgical and Gynecological Association, at Richmond, Va., November 10, 1891.

have been doing more work in the same line, and I propose in the present paper to report eight additional cases that have come under my care.

The operation is one of great value, both in gonorrheal and traumatic cases, and I think one is justified in bringing forward any experience in it that may be of use to the profession. My results, as will be seen, are very satisfactory—a fact that I attribute rather to the fortunate circumstance that my patients were largely free from grave constitutional disease than to any method or application that I have to suggest. I have simply followed what I consider the precepts of good surgery as applied to this region of the body, viz.: free incision, free drainage, and so much of antiseptic surgery as the circumstances will allow.

CASE I.—W. T., fifty-one years of age, a brick-layer. He had gonorrhea at twenty, and has had several attacks since. At twenty-seven a stricture developed, and gave him much trouble. Retention of urine occurred several times, and had to be relieved by the catheter. He has suffered a good deal of late from difficulty in urination, much straining being necessary, and the stream being very small. On May 9th, while making strenuous efforts to void his urine, there was felt sudden and severe pain in the perineum, followed by some relief from the desire to urinate and the early development of a painful swelling. When I saw patient, on May 13th, I was unable to pass an instrument into his bladder. The perineum was much swollen, and the scrotum and lower abdomen showed every evidence of extensive extravasation of urine. On the right side the swelling extended to the umbilicus, and well over toward the loin. The circumstances by which the patient was surrounded made operation at home practically impossible, and I had him removed to the Maryland University Hospital. On the following day I made large incisions into the connective tissue of the perineum, scrotum, and abdominal wall, freely laying open all the structures involved in the infiltration. I then sought the urethra in the perineum, and after only moderate trouble found it, and laid it freely open. The strictured bulbo-membranous region was then attacked from behind and freely incised, the operation terminating by passing a sound (No. 18 English) into the bladder through the urethra. Recovery was complicated by a considerable secondary hemorrhage from the abdominal incision several days after the operation, but in other respects the patient did well, the temperature not reaching above 101°. Sounds were passed on every third day, the wounds made on account of the urinary infiltration rapidly healed, and the patient left the hospital in about six weeks, in good condition, and able to pass a sound (No. 20 English). I have seen the patient within the last few months, and he tells me that his condition is satisfactory, and that he can pass a good stream of urine.

CASE II.—C. H., thirty-eight years of age, a waiter. He entered University Hospital on April 1, 1888, suffering with stricture of the urethra and

perineal fistulæ. Ten years ago he had repeated attacks of gonorrhea, and suffered several times from retention. About five years ago, after an attack of retention, two small fistulæ formed in the perineum. Urine escaped from these openings in small quantity for about six weeks, when they closed and remained closed for about six months. After this they opened, and discharged from time to time. The patient suffered often from retention, which was with difficulty relieved by catheterization, but he was able to continue at his work. On March 14th he fell into the hands of an electrical expert, by whom electrolysis was practised. Whether *post* or *propter hoc*, a perineal abscess followed. This was opened in the dispensary before his admission to the hospital. Upon admission the patient was in a deplorable condition. He was able to pass very little water, and that little in dribbles, through his urethra and fistulæ with much pain and straining. Complete retention soon followed. Repeated attempts were made to relieve by catheterization, but no instrument could be passed. Anodynes and a hot sitz bath brought some relief. On April 12th, all attempts to pass an instrument having repeatedly failed, the patient was etherized, and the perineal section without guide undertaken. The way to the bladder was again sought, both by way of the penis and the fistulæ, but in vain. The perineum was a mass of cicatrices, in which the urethra was vainly searched for, until, finally passing deeply into the perineum, the membranous portion was laid open and an instrument passed into the bladder. The strictured portion was then attacked from behind. When opened sufficiently for the purpose, the Otis urethrotome was passed, and the canal freely incised. After the operation a No. 18 English catheter passed easily through the urethra into the bladder. The hemorrhage in this case was tolerably free, but was kept measurably under control by irrigation with a hot solution of sublimate, 1 to 1000. After completion of the operation, the hemorrhage continuing to be troublesome, the wound was lightly packed with iodoform gauze, and the patient's legs tied together. In the evening of the day of operation the patient was comfortable, and had a temperature of 98° and a pulse of 80. At 5 o'clock on the following morning there was a lively chill, and the temperature ran up to 105°, with a pulse of 120. The wound was unpacked and irrigated with sublimate solution, the water drawn by catheter, the bladder washed out with plain warm water, and the wound lightly packed and dressed as before with iodoform gauze. On the evening of the same day the temperature was 99°, and the pulse 108. No further complication occurred. A sound was passed on the third day, and regularly thereafter, and at the end of a week the patient was walking about the ward. At the end of the second week, all of the urine passed naturally, and both fistulæ and operation-wound were nearly healed. In the meantime the general health greatly improved, and when the patient left the hospital, about four weeks after operation, he was passing a good, full stream of urine, three or four times a day. I have no later information in regard to this patient's condition. The

case is especially interesting to me, not so much on account of the brilliant ultimate result of the operation as on account of the associated facts that the free hemorrhage made it necessary to pack the wound, and that there was such a decided urethral chill on the morning of the second day. The chill itself was a beautiful example of its class. On the day of operation the temperature was normal. On the morning of the next day it suddenly shot up to 105°. Within twelve hours it was practically normal again, and continued so until the patient was discharged. This fall of temperature occurred without antipyretic treatment, save irrigation of the wound and bladder, and re-dressing the perineum.

CASE III.—J. H., twelve years of age. The boy was coasting, and fell from his sled with his head down hill and his feet up. The sled of a companion following close behind him struck him in the perineum, causing considerable bruising of the part. He paid comparatively little attention to the injury, and did not even mention it when he returned home. After being at home some little time he felt the desire to urinate, and went to the closet. Upon making the attempt he was surprised to see a drop or two of blood issue from the penis, and to find that he could not pass water. The family physician, Dr. W. F. A. Kemp, was called in, and attempted to relieve the boy by passing a soft catheter. The attempt failed, and the doctor asked me to see the patient. On the following morning, January 29, 1888, we met at the patient's house. The perineum was by that time pretty black, and the penis and scrotum considerably swollen. Attempts to pass instruments having failed, ether was administered, and the perineum laid open. The tissues were much contused, and a considerable clot was turned out. With some difficulty the urethra was found. A No. 8 English steel sound was passed through the wound, and we were astounded to see that it went in very smoothly, and continued to go without meeting any resistance until the shaft of the instrument was flush with the perineal wound, and the point easily felt under the abdominal wall, immediately below the umbilicus. The specter of ruptured bladder momentarily appeared to us, but when we reflected that there was no sign of shock or other grave symptom, we were comforted. A soft catheter brought away twenty-four ounces of normal urine, and relieved our apprehensions as well as the patient's bladder. There was moderate oozing from the wound, but not enough to give trouble. The wound was well cleansed and lightly dressed with iodoform gauze, and the patient put to bed. The subsequent course of the case was uneventful. Sounds were passed at intervals of a few days, and the patient made a good recovery. The interesting point in this case to us was the extent to which the sound passed up into the bladder when the urethra was first opened. Finding, however, that the sound passed up almost as high after the bladder was emptied, we concluded that the fusiform shape of the infantile bladder was in this patient retained to an unusual degree.

CASE IV.—G. P., forty years of age, a physician, had led a very irregular life from early youth, and

among other accidents had had gonorrhea many times. He had been long aware of the fact that he had stricture of the urethra, and had treated himself occasionally during the quieter periods of his life. He was an alcoholic and an opium-eater, and his urine contained a moderate quantity of albumin and casts. Attempts to pass instruments became more and more difficult, until finally, in February, 1889, their passage became impossible. The urine still trickled away by drops, and the patient had to be aspirated on several occasions. Neither he nor I were able to pass an instrument through the urethra, and as his condition was growing more serious from day to day, I recommended external perineal urethrotomy. The patient hesitated somewhat, but finally consented. The operation was an unusually easy one. The stricture was in the bulbo-membranous portion. I did not attempt to go through it, but operated back of the affected region, and sought the membranous urethra. On this occasion I opened the urethra in less than eight minutes after making the first incision. After emptying and washing out the bladder, the stricture was attacked from behind and easily incised. A No. 18 English sound was passed through the urethra as the final step in the operation. The wound bled little, and was dressed as usual by lightly packing it with iodoform gauze. The patient was nervous and somewhat feverish for several days, and gave cause for uneasiness on account of his general condition, but ultimately made a satisfactory recovery. The perineal wound healed kindly, and when the man left the hospital at the end of three weeks a No. 18 English sound passed readily, and the stream of urine was full and free.

CASE V.—F. Q., forty-three years of age, entered the hospital in December, 1888, with the following history: He had gonorrhea in 1868, and another attack in 1883. In 1884 he began having trouble in passing water. He then entered the hospital, and was treated by gradual dilatation, beginning with a filiform bougie, and working up to a No. 18 of the English scale. He left the hospital in good condition, and with instructions to return every few days to have an instrument passed. After a few visits he neglected to do this, and shipped as a sailor on a vessel leaving Baltimore. He had no trouble, however, until July, 1888, when he returned to the hospital in a worse condition than before. He was passing water by drops, and it was found impossible to introduce an instrument into his bladder. After several aspirations, and continued failure to pass instruments, it was determined to open the perineum. On January 3, 1889, the patient was etherized and the operation performed. The stricture was in the bulbo membranous portion, and the deep perineum was in good condition. In this case I first adopted a method from which I have since had great satisfaction, viz., that of using scissors after making the first incision. Making a free incision from the scrotal reflection to the verge of the anus with a bistoury, I passed a thread through the lips of the wound as usual, for the purpose of keeping the parts exposed. Then taking sharp-pointed scissors, and being enabled in that way to keep rigidly in the

median line, I went straight ahead, and was very agreeably surprised in being able to open the urethra in just eight minutes from the moment of making the first incision. I opened the canal behind the stricture, and easily passed a large instrument into the bladder. That viscus having been emptied and well washed out, I attacked the stricture from behind and opened it freely. As the final step a large sound was passed through the whole urethra into the bladder. There was no hemorrhage of any consequence. The wound was dressed as usual. The temperature chart shows 100° on the third day, and a practically normal line afterward. Sound (No. 18 English) was passed every third day, and the patient left the hospital February 2d, well.

CASE VI.—C. E. K., twenty-four years of age, entered the hospital January 22, 1889, with the following history: While cutting timber in June of the previous year the patient was caught between two trees and very severely crushed. He was carried home, and seen by Dr. J. Lee McComas, of Oakland. The doctor found extensive fracture of the pelvis, and a ragged wound at the right side of the perineum. The patient was kept quiet in bed, and no special treatment used except with a view to overcome shock. In a few days a large swelling developed in the perineum and toward the inner surface of the right thigh. This was opened, and discharged a large quantity of pus, together with a splinter of wood as big as the little finger. Later, feces, urine, and pus passed freely from this opening. When the patient entered the hospital, feces had ceased to pass by the fistula, but pus and urine continued. Some urine also passed by the penis, but this, as well as that which passed by the fistula, was mixed with pus. The right thigh was fixed in the flexed position, somewhat adducted, and the tuberosities of the ischia were only two inches apart. No instrument could be passed into the bladder, but on the right the probe could be passed far up the fistulous tract. On March 1st the patient was etherized, and external perineal urethrotomy performed. The operation was very difficult, and took a long time. The distortion of the pelvic bones, as well as the cicatricial condition of the soft parts, robbed me of all anatomical aid, and the only guide I had was the prostate gland, which I could feel through the rectum. Finally, however, the bladder was reached and washed out, the urethra opened, and a large soft catheter passed and tied in. This procedure, which I abominate, and never use if I can help it, was necessary in this case, as will be readily seen from the preceding description of the parts as I found them. By using a wooden plug, the catheter was controlled and the urine evacuated at will. The patient did well for the time, and at the end of two weeks went home under the care of Dr. McComas. Later, however, he removed the catheter from the bladder, and was not able to replace it. He continued doing reasonably well for a time, but grew worse again, and returned to the hospital in January, 1890, in as bad a condition as before, with the addition of much cicatricial tissue in his perineum. I tried again to make the section, but failed, and subsequently established the

continuity of the urethra by first making an epicystotomy, and then passing a sound from above the pubes through the prostatic urethra, and cutting down on it in the perineum. A long tube was then passed through the epicystotomy-wound, and out through the urethra, with drainage-holes in the part that occupied the bladder. This operation gave the patient considerable relief. There was, however, much bone-exfoliation from the interior of the pelvis, which kept up the fistulous discharge; and although when he passed from my care the continuity of his urethra was established, he was still suffering much from the other effects of his serious injury, and will in all probability never be restored to full health. I was never able to determine the exact degree of injury inflicted in this case, nor to understand perfectly the mechanism of it. The main traumatism seems to have been an almost fatal squeeze between the two trees, which fractured the right half of the pelvis in some way. In addition to this there was a wound made by the perforation of the perineum by the splinter of wood referred to. Which of these wounds produced the damage to the urethra and rectum, thus causing feces, urine, and pus to escape from the same opening, it is difficult to determine. Several pieces of bone of considerable size were removed from the fistulous tract during the second operation, but they were so changed that it was impossible to say to what spot they belonged. The spines and crests of the ilia seemed normal, but the approximation of the tuberosities showed that there must have been pelvic fracture with considerable displacement. Cases VII and IX of my former series illustrate the manner in which the fractured extremity of the ischio-pubic ramus is thrust into the perineum, crushing all of the soft parts in the way, but I am by no means sure that this is the mechanism of the traumatism now under discussion. This case is also particularly interesting to me, as it is the first in which I was unable to reach the urethra in the perineum after repeated trials. The method of finding the urethra by retrograde catheterization is one I have had in mind for a long time, but up to this time I have had no occasion to use it. It was first used by Brainard, of Chicago, in 1849, and has since been used by others, but it is not so much as mentioned in many books on venereal surgery. The ease, comfort, and safety with which this operation can be performed made a great impression on me, and I have made up my mind never again to undergo the trying ordeal of a long and tedious perineal section, especially on a patient with a full bladder. In cases in which the stricture is in the usual place, and there has been infiltration or the formation of fistulae, the section without a guide is not difficult, and the supra-pubic opening is not necessary; but when one has to operate in a mass of cicatrices, and cut and feel from hour to hour, and perhaps at last find that he has been within a hair's breadth of the canal all the time, the supra-pubic incision will save much time and hard work, as well as much unnecessary wounding of the perineal tissues.

CASE VII.—J. H., colored, thirty-five years old, a laborer. I was called to see this patient by Dr.

R. M. Hall, of Baltimore. Finding the circumstances such that I could not treat the patient satisfactorily at home, I recommended that he be taken to the University Hospital. He gave the following history: He had had the usual diseases of youth, but denied venereal disease of any kind. On March 1st, while carrying a hod of mortar, he slipped and fell across a plank. He does not think he was struck in the perineum, but afterward had trouble in passing urine, and his water was stained with blood. He continued to work until March 7th, when he had an attack of retention. An instrument was passed, but no urine flowed. Afterward he passed blood and then urine. He noticed a swelling in the perineum that gradually crept up the right groin and affected the scrotum. When first seen (March 15th), he presented the picture of a man with a rather large inguinal hernia. Soon after admission, on March 16th, complete retention having supervened and attempts to pass instruments having failed, the perineum was laid open, and a large amount of stinking pus evacuated. The urethra was easily found, because the burrowing pus had made a pretty clean dissection of it, and it stood out in the wound like a cord. The canal was opened, but the sound failed to pass into the bladder by reason of a tight stricture back of the point of incision. A fine director was, however, insinuated through the stricture and followed by a bistoury, and the constriction incised. A large sound was then passed through the whole length of the canal. The burrowing of the extravasated urine and pus had been so extensive that the wound now was a veritable yawning chasm, which extended from the deep perineum through the right half of the scrotum to the hypogastrium. The room in which the operation was performed was scarcely habitable by reason of the fetid odor of the pus and urine that had been evacuated. Yet the general condition of the patient was, on the whole, satisfactory. The cavities were loosely filled with iodoform gauze, and the perineum dressed with a large, loose pad of the same, backed by absorbent cotton. On the third day the temperature rose to 104° , and for several days thereafter was somewhat irregular. On March 22d a large abscess was discovered in the left buttock. This was incised and drained. After this, improvement was more manifest and the patient recovered gradually. A No. 18 English sound was occasionally passed. When discharged from the hospital, at the end of a month, the patient had almost recovered his full health.

CASE VIII.—R. R., about twenty-five years old, a carpenter, on October 11, 1891, fell astride the round of a ladder and hurt himself. He did not, however, regard his injury as of much consequence. Finding that when he attempted to urinate only a little blood came, and that his perineum was beginning to swell, he called his physician, Dr. J. W. Laird, who attempted to pass a catheter. The attempt failing, I was called in consultation. I also failed to pass an instrument, as was to be expected, and immediately proceeded to make the section. The patient was a man of nerve, refused to be anesthetized, and exhibited admirable fortitude during the operation. The perineum was freely laid open from scrotal

reflection to the verge of the anus. Some clotted blood and much bruised tissue was exposed. The dissection was carried down in the median line with scissors, and the urethra easily found and opened. The case progressed well; and the wound healed kindly. There was, however, some difficulty in passing urine. Some weeks after the operation I saw the patient, and made a hurried attempt to pass an instrument, but failed. There was no urgency in the symptoms at the time, and I asked him to come to me at another time. Since that visit I have not seen him, and so cannot give the ultimate result of the case. So far as the operation is concerned, however, it was easily done, and served its purpose perfectly, and probably saved the patient much suffering from urinary infiltration and suppuration of the perineum.

REMARKS.—The report of these eight cases brings up the number of patients on whom I have made the operation of external perineal urethrotomy to seventeen, and the conditions that made that operation necessary include nearly all of those that ordinarily indicate it. None of the patients have died at a period earlier than six months after the time of the operation, and the deaths that have occurred were due to other causes. I have only to add to the remarks made at the conclusion of my last report, that increasing experience leads me to have more and more confidence in the good results of opening the perineum, and less fear of danger. It is true that I have had unusually good fortune in operating on cases that, as a rule, presented no grave kidney lesion; but while it must be admitted that such complication adds to the risk of the operation as such, if not more than it does to others of equal gravity, I am firmly convinced that opening the perineum in old stricture cases with bad kidneys is much freer from danger than internal urethrotomy, or even dilatation. A case in point may not be out of place.

About ten years ago I did an internal urethrotomy on a patient with an old tough stricture. In forty-eight hours he had a temperature of 107° , and was very ill. The same patient returned to me a few weeks ago; I could pass a No. 10 English sound with difficulty. The stricture was resilient and closed after the sound to such an extent that urination was difficult and unsatisfactory. The patient had been having chills, and was somewhat nauseated and weak. His urine, although ammoniacal and ropy, contained no evidence of grave kidney trouble. I proposed a combined internal and external urethrotomy, and refused to do either operation without the other. The patient consented. I opened the perineum freely, and cut the urethra with the Otis instrument to No. 40 French. The temperature did not rise above 100° . The patient did well in every particular, and in three weeks I sent him home, passing a No. 36 French instrument on himself.

FACIAL ERYSIPELAS COMPLICATING
TYPHOID FEVER.¹BY D. N. EISENDRATH, A.B., M.D.,
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OF all complications occurring during the course of or following as a result of typhoid fever, erysipelas in general, and especially the facial variety, is the rarest. Having had the opportunity to observe four cases during the past six months, I desire to add reports of them to the literature of the subject. The first two cases occurred within three days of each other—the patients occupying beds about thirty feet apart, upon opposite sides of the ward. Care had been taken to isolate the first case in a private room with a special nurse, but the same physicians visited both patients. The first case is as follows:

CASE I.—W. G. La C., a printer by occupation, twenty-six years of age, was admitted May 7, 1891, with a history of having felt dizzy, dull, and tired for three or four weeks, with gradual loss of appetite, and frontal cephalalgia, so that he was unable to look up. The bowels had been costive until relieved by laxatives ten days before admission, when they moved from four to eight times, the discharges being thin and light-yellow. Clots of blood had been daily removed from the nose, but there had been no epistaxis. The man had been unable to work and was obliged to go to bed fourteen days before coming to the hospital.

Upon admission, May 7, 1891, the patient complained of a dull and tired feeling. There was moderate tympanites, with extreme tenderness over the right iliac region. The bowels were moved twice in twenty-four hours, the feces being thin, watery, and fetid. The temperature was quite characteristic, and on May 15th there was a typical roseolous eruption. On May 18th there were severe epistaxis and marked muscular twitchings; the man was constantly picking at his nose.

On May 19, 1891, the twenty-seventh day after taking to bed at home, a well-defined erysipelatous swelling appeared on the right side of the nose and face. The pulse was rapid (120) and weak and the patient was placed in a private room with a special nurse. He was put on cardiac stimulants, whiskey, ammon. carb. and tr. digitalis every four hours, alternating with tr. ferri chloridi, $\mathfrak{m}\mathfrak{xv}$, with applications of wet boric acid dressings.

On May 21st the swelling had extended to the left side of the face and nose. There was a busy, muttering delirium, the pulse was weak and rapid (130), and there was marked tympanites. The man died May 22d. A post-mortem examination was made, but failed to reveal any but the usual typhoid lesions of the third week.

CASE II.—The second case, that of C. C., a laborer, admitted May 6th, occurred in the same ward three days after the discovery of the first case. The patient was twenty-eight years old and in

robust health up to the beginning of his illness. This began ten days before admission, with all of the early symptoms of typhoid fever, which in the hospital became moderately severe, the afternoon temperature daily reaching 105° , but yielding to the full bath and antipyretics. On May 13th the urine contained albumin, and hyaline and granular casts. On May 14th the man had three severe intestinal hemorrhages, and upon the next day another of smaller amount, and he vomited an ascaris lumbricoides or round-worm. His temperature again rose to 104.8° , but gradually fell to 100° on May 21st, and the general symptoms seemed to be those of beginning convalescence; but upon May 22d, the twenty-seventh day of his illness, a typical erysipelatous swelling, extending over both sides of the face, nose, and forehead, was noticed. The temperature again rose to 103° and the patient was removed to the isolation-ward under the care of a special nurse. Typhoid orders were stopped and wet boric acid dressings were ordered to the face and head, and tr. ferri chlor. $\mathfrak{m}\mathfrak{x}\mathfrak{x}$, whiskey $\mathfrak{z}\mathfrak{j}$, strychn. sulph. $\frac{1}{2}$ gr., every four hours. Upon May 24th the man was restless and delirious in a busy and constant-muttering way. The erysipelas had spread to the eyelids, neck, and ears. The pulse was weak and rapid (140-160), and despite careful stimulation the patient died on June 3d, eleven days after the appearance of the erysipelas.

In both of the cases reported the complication markedly increased the gravity of the illness. Both had certainly passed the danger-point, the second after four hemorrhages, when the facial erysipelas began. There were no other cases in the regular wards of the hospital until October, 1891, after an interval of five months, during which time the special ward designed for erysipelas patients had been vacant.

The third and fourth cases occurred in different wards, but under the care of the same physicians—the third in the male, the fourth in the female medical ward—there being an interval of eight days.

CASE III.—R. R., German, female, twenty-seven years of age, entered September 25, 1891, having been ill for four days, with early symptoms of typhoid fever. Upon admission she presented a typical picture of the first week, viz., tremulous, whitish furred tongue, tenderness in the right iliac region, enlarged spleen, dulness and languor, and a stupid expression. The temperature was 102.8° , but upon the following day dropped to 99.2° and rose on the same day to 101.8° and assumed the characteristic type until October 2d, when it fell gradually to nearly normal. The patient now seemed quite bright; her pulse was 100, and the case appeared to be one of only moderate severity. On October 6th the temperature again rose to 103.4° and the pulse became more rapid (132-144). Cardiac stimulants were ordered and patient did well until October 11th, the twenty-first day of her illness (according to her statement), when erysipelas began upon the bridge of the nose, and extending rapidly on both sides of the face,

¹ Read at the Meeting of the Cook County Hospital Clinical Society of Chicago, November 5, 1891.

assumed a butterfly form with sharply outlined margins. She seemed very stupid and dull, the lips cyanotic, the face and hands pale and cold, the respiration rapid (40), the pulse 144, weak and irregular. With the appearance of the erysipelas a sudden change had occurred. The patient was transferred to an isolation-ward, placed under the care of a special nurse experienced in the care of this class of cases and given cardiac stimulants; nourishment was given by the mouth and rectum. Tr. ferri chlor. \mathfrak{m}, xv , every four hours, and the application of a 10 per cent. solution of ichthyol to the face were ordered. The patient's condition, however, rapidly became worse, and she died on October 14th, having been delirious, with rapid respiration and frequent pulse, and constant involuntary muscular twitching prior to death.

CASE IV.—The fourth case occurred eight days after the preceding, upon the twenty-second day of the patient's illness, following shortly after several attacks of epistaxis and constant picking at the nose.

J. P., a Swede, thirty-eight years of age, was admitted to the ward October 4, 1891, with a temperature of 104° , and marked involuntary twitchings of the muscles of the face and hands. He presented all the objective symptoms of typhoid fever. His tongue was very dry and coated with brown sordes, and there was a busy, muttering delirium. He was ordered resorcin as an intestinal antiseptic, with the addition of quinine and strychnine, and he was placed upon typhoid orders. Within three days his temperature dropped to 96° (axilla) (the reason for this being unascertainable), and remained at 101.2° until October 15th, when the patient seemed very bright, with tongue quite clear; the temperature became normal, with the pulse 96. With the aid of an interpreter the patient was able to state that he had been ill seven days prior to admission and had had typical prodromal and early symptoms. Convalescence seemed to have begun—the good effect being ascribed to the resorcin, when upon October 17th he had one slight and two severe attacks of epistaxis. He did not seem as rational, and he was constantly picking at the nose with his fingers. Upon the evening of October 18th the temperature suddenly rose to 101.5° (axilla). No cause for this rise could be found, but upon the following morning the man was quite delirious, the pulse 120, weak and irregular. A well-defined erysipelatous swelling was now present upon both sides of the face and nose and upon the upper lip. It was estimated that this must be the twenty-second day of his illness. He was immediately transferred to the isolation-ward. Cardiac stimulants, tr. ferri chlor. \mathfrak{m}, xxx , every four hours, and constant application of wet boric acid dressings were ordered. The respiration was shallow and rapid; there was marked delirium; the pulse was 120, weak and irregular; and death took place October 20th—thirty-six hours after the first recognition of the disease.

Although the mortality-rate in the cases reported is very high, we feel confident that everything possible was done in order to save them. Experienced

nurses, prompt recognition and medication were employed.

According to Liebermeister in his exhaustive article upon "Typhoid Fever" in *Ziemssen's Cyclo-pedia*, erysipelas as a complication generally occurs during convalescence and rarely at the height of the disease; the complication may be a dangerous factor.

Of 1420 cases of typhoid fever seen at Basle, erysipelas appeared in ten cases, all of which recovered. In other words, the complication occurred in a little less than one per cent of the cases.

In our own hospital, in 1200 cases occurring in the regular wards since 1888, there are records of two cases, one of which recovered, while the result in the other case is not mentioned, so that we have had six cases in 1200, or one-half of one per cent. Gerente, quoted by Hare and Patek in their article upon "Rare Complications of Typhoid Fever,"¹ has found, including Liebermeister's, that erysipelas occurred in sixty-four cases of 3910, or nearly 2 per cent. He has also found that it is most frequent in the grave adynamic forms of typhoid and in those of long duration. It shows itself especially, and almost exclusively, during the last period and during convalescence, as in my cases. According to Gerente, it produces a marked amelioration of the symptoms, but with this statement I cannot agree, as in all of our cases it caused a most decided change for the worse, and almost immediately increased the gravity of the prognosis. Gerente also states that the appearance of facial erysipelas in typhoid is of grave prognosis (sixteen deaths among thirty-six cases), the gravity lying less in the erysipelas than in the poor general condition of the patient.

The question as to the path by which the germs gain entrance has been much discussed. According to Griesinger, they enter by means of an inflammation of the frontal or sphenoidal sinuses and also when ulceration of the buccal mucous membrane exists. In the foregoing cases it seems quite plausible that the germs should have gained entrance by the abraded surfaces caused by the constant picking at the nose after the epistaxis in the first, second, and fourth cases. In none of these was there any visible buccal ulceration or any stomatitis.

Unfortunately, at the time of the occurrence of these cases we were unable to make any cultures from any fluid removed. Whether the streptococcus erysipelatosus of Fehleisen is the cause of the erysipelas complicating typhoid is doubtful in some cases, for Rheiner² was unable to find the germ in two cases of gangrenous erysipelas following typhoid. In these he found bacilli which he believed

¹ THE MEDICAL NEWS, June 20, 1891.

² Rheiner: "Beiträge zur pathologischen Anatomie des Erysipels bei Gelegenheit der Typhus-Epidemie in Zürich, 1884." Virchow's Archiv, Band c, S. 185.

were identical with the Klebs-Eberth bacillus of typhoid. Hare and Patek found the streptococcus of Fehleisen in some serum removed from one of their cases.

In regard to the treatment there is little to be said. A number of specifics have been recommended. The erysipelas in these cases of typhoid is of short duration, and the first indication is to stimulate. Camphor is especially recommended. Hot antiseptic compresses or painting the parts constantly with ichthyol complete our present therapeutic measures.

THE RECENT INVENTIONS OF NEW OPTICAL GLASS.

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THE microscope is chief among delicate optical instruments, and "what it has accomplished constitutes the glory of the natural sciences." Since the discovery of the compound microscope in Holland, about 300 years ago, it has passed from the workshop of the spectacle-makers to the hands of the trained optician, where it has undergone, by successive gradual steps, those corrections and improvements that we see in the instrument of to-day. Transmitted light was first used in 1685, the reflecting illuminating mirror in 1715, and the greatest of all improvements—the achromatic and aplanatic objectives—in 1824. Bacteriologic study must be credited with a great share of the more recent advances, for in this work the constant endeavor is to see further and finer in the search for the physiologic and morphologic structure of the ultimate protoplasmic bodies or cells of all living tissues.

Up to the beginning of the last decade it may be said that the limit of performance had been reached, with the lenses in use, composed of the ordinary crown and flint glasses, taking into account the best individual management and technique—the most important element of success in microscopy. Faraday, Ross, and a clergyman named Harcourt, in England, Chevalier in Paris, Amice in Italy, Fraunhofer in Germany, and other less well-known men, had years ago produced new and improved glass and lenses; but impermanency of external surface, due to instability of the elements of the glass, proved an insurmountable obstacle to its general use, as also the enormous attendant expense of further investigation and production. It came to be universally felt that if we were to advance further in the study and knowledge of the infinitely little, in all branches of natural science, in biology and medicine particularly, and in view of the fact that the limit of perfection regarding the management of spherical and chromatic aberration had been reached, new glass must be produced. The history

of previous attempts in this field was of much value. Bodies of lower refractive indices were known, such as the diamond and other precious stones, but, for various reasons, the employment of these was impracticable; but fluor-spar or fluorite, having both a low-color dispersion and a low refractive index, was taken up, and objectives of vastly improved qualities produced. This mineral, found native in the Bernese Alps in Switzerland, offered great convenience in the choice of kinds of glass to be used in obtaining perfect compensating effects for the removal of chromatic and spherical aberrations, and neutralizing subsidiary effects in lens systems. But it was soon discovered that fluor-spar could not be obtained in the quantity and of the quality desired, and attention fortunately was now turned solely to the laboratory.

It was here that the Prussian government stepped in, and with a grant of 60,000 marks (\$15,000) the experimental stage of the work was begun in Jena, about ten years ago, under the direction of Drs. Abbe and Schott, and their associates in physics and chemistry. In two and a half years the chief practical work of the investigation was effected, and they succeeded in determining experimentally the mutual relations of optical effect and chemical composition, for all possible amorphous compounds produced by solidification after fusion. A whole year was spent in collecting data, on which it was predicted that a systematic investigation of the question of glass-smelting would lead to an advance in practical optics.

The impossibility of getting rid of the chromatic differences of spherical aberration is dependent on the fact that, with the crown and flint glass formerly used, the dispersion always goes hand-in-hand with the mean refractive index, so that the higher dispersion always belongs to the higher index, and *vice versa*. The aberration would be completely, or at least approximately, compensated, if we possessed materials in which a relatively low refractive index was combined with a high dispersion, or a high refractive index with a relatively slight dispersion. It would thus be possible, by a suitable combination of such a material with the ordinary crown and flint glass, to remove the chromatic and spherical aberration independently of one another, and thus to fulfil the essential condition on which the removal of the chromatic difference depends. The perfecting of delicate optical instruments appeared, therefore, to depend on an advance in the art of glass-smelting, so that it should be possible to produce glasses, suitable for the removal of the secondary spectrum, in which dispersion and mean refractive index would be differently related than in the glasses then in use.

The uniformity in optical properties that char-

acterizes most kinds of glass is due to the small number of materials used in their manufacture, viz., silica, alkalis, limestone, lead, and, in lesser degree, clay and thallium. The great aim was to advance beyond these narrow limits; and, directed by a methodical study of the optical characters of various chemical elements, the investigators used such as appeared suitable to the end in view. They had to produce a glass free of foreign matter, and with a not too strong action on the walls of the containing vessel; to be kept homogeneous by energetic stirring while in the molten state, so that it would be free from striæ of refractive indices different from that of the main mass; free of cloudiness, crystal-formation, and blisters, in melting and cooling; to bear reheating to the melting-point without cloudiness or crystal-separation; kept free from strains by suitable process of cooling; it must offer sufficient resistance to atmospheric agencies, and must show no signs of hygroscopic properties; be colorless; and of sufficient hardness to allow of grinding, polishing, and shaping of the refractive surfaces.

Only relatively few inorganic anhydrides give rise to amorphous bodies when fused with certain metallic oxides and cooled. Hitherto, silica was the only one that answered the requirements named, but boric, phosphoric, and arsenic acids were known to yield glass-like bodies in certain of their compounds. The fusions of phosphoric and boric acids with a great number of metallic oxides, working with small porcelain crucibles and laboratory blow-pipe, yielded, after many failures, glasses of extraordinary variety, and thus showed that considerable gradations in refractive index and dispersion could be obtained by their use. Finally, after long and wearisome labor, samples of glass weighing upward of 25 kgm. were obtained, large enough for all practical and scientific purposes. By these the optical characters of a large number of metallic oxides were soon recognized, and it was found possible to incorporate in the glass, in quantities above 10 per cent., twenty-eight other bodies, besides the five hitherto used. There were: Boron, phosphorus, lithium, magnesium, zinc, cadmium, barium, strontium, aluminium, beryllium, iron, manganese, cerium, didymium, erbium, silver, mercury, thallium, bismuth, antimony, arsenic, molybdenum, niobium, tungsten, tin, titanium, uranium, and fluorine.

The first object of the investigation—the power of obtaining gradations in refraction and dispersion—was thus attained. For the removal of the secondary spectrum, however, only comparatively few elements were found to offer suitable variations from the ordinary course of the dispersion. Of these, boric acid produced a contraction of the blue and a widening of the red extremity of the spectrum, while

fluorine, potassium, and sodium had an opposite effect. For all other elements the course of the dispersion was the same as with silicate glass. Accordingly, since the ordinary flint glass shows an extension of the blue extremity of the spectrum as compared with crown glass, as high a percentage of boric acid as possible must be incorporated with it in order to obtain a perfect compensating effect. Thus boric acid has become the fundamental constituent of all flint glasses destined to diminish the secondary spectrum. The conditions are less favorable when it is desired to effect the compensation by widening the blue extremity of the spectrum of a crown glass. Of the three elements—fluorine, potassium, and sodium—suitable for this purpose, the last only can be introduced into silicate glass in very small quantities, and the potassium in quantities not exceeding 25–30 per cent.; this because of their hygroscopic effect.

The chief characteristic of phosphoric acid—that of yielding glasses of comparatively slight dispersion, with high refractive index—was made use of to solve this problem, for it had been found that, with equal ratio of refraction and dispersion, glasses of higher refractive index showed an extension of the blue extremity of the spectrum. Thus, by the use of phosphoric acid for the crown glass, and a glass containing a high percentage of boric acid for the flint, it was found possible to almost completely remove the secondary spectrum.

While introducing material to produce certain optical effects, an important point to be considered was the modification of the composition of the glass, so that its external character should remain satisfactory. With phosphates and borates the alkalis must be used sparingly, or deterioration of the polished surfaces of lenses under the influence of the atmosphere is unavoidable. It was ascertained, however, that certain glasses, in themselves hygroscopic, could be made serviceable by the introduction of large percentages of clay, zinc oxide, or other compounds, but with the greatest accuracy, otherwise partial or complete crystallization ensued. On this ground many of the possible borate and phosphate glasses had to be excluded. However, a series of phosphate and borate glasses were produced. For the phosphate, magnesia, clay, and potash offered the least resistance, so that a crown glass could be produced with dispersion far less than that seen in any yet made. The use of baryta with phosphoric acid in a crown glass caused a decrease of refractive index, and at same time a lower dispersion. An aluminium-sodium-baryta-borate gave a borate crown glass, the ray-path of which is useful for many purposes. The borate flint glasses, containing as much 50 per cent. of boric acid, were made by the addition of clay, zinc oxide, and barium

oxide, to satisfy all requirements, and to show no sign of hygroscopic characters.

The problem of the removal of the secondary spectrum having been satisfactorily settled by the production of the phosphate and borate glasses, attention was now directed to the improvement of the ordinary silicate glass in common use. By the introduction of boric acid, zinc oxide, magnesia, baryta, and clay, silicate crown and light flint glasses were obtained with very varied relations of refraction and dispersion. These combinations are found to be of great service in aplanatic constructions for photographic purposes, for, owing to their increased transparency for the chemically active rays and their slight dispersion, they give plane and sharp images in the camera.

Dr. Schott's experience with "Hart" glass, some years preceding this investigation, proved valuable when the problem of cooling, and the effect of strain, came to be considered. By experiment he had proved that the hardening of glass proceeds inward, layer by layer, and this induces a state of strain, manifesting itself by diminished specific gravity and the phenomena of double refraction. These excentric strains are especially harmful in lenses, as the focal length varies in different parts, as if it were cut irregularly in the direction of the strain. Finally, the molten contents of the thick copper cauldrons were cooled so gradually that a fall of ninety-five degrees of temperature extended over periods as long as four weeks, the large gas flame being connected with a mercury vapor pressure thermometer, both regulating the flame and marking the temperature. It became necessary to construct complicated and unusual apparatus for the production of the glass in large quantities. For making borate glass, platinum crucibles and stirrers with rotary and up-and-down motions became necessary. Corrosion of containing vessels, cooling of surface, and formation of air-bubbles and striae in cooling, had all to be overcome.

Coming now to the practical benefits, the result already realized from these improvements and inventions is that while microscopically we could distinguish objects in the approximate form of circles or squares of a diameter of $\frac{1}{100000}$ of an inch, we now distinguish them if $\frac{1}{125,000}$ to the inch. Yet this may make the difference between tracing definitely some part of the life history of a micro-organism, or failing to trace it. There is still on this side of the ocean a doubt as to the stability and durability of the new glass, and the new "apochromatic" objectives made from it. Some of the first objectives from the workshops of the leading opticians in Germany have been returned for the removal of external surface defects—probably of a hygroscopic character—due in ordinary use to ex-

treme sensitiveness and chemical action from atmospheric exposure. But the later objectives are more stable, and are coming into more extended use when it is desired to attain the highest results in biologic study. There is no longer just reason for denying the superior qualities of these new lenses for definition and management of light and color. For the average worker in biology and pathology, the best lenses of superior crown and flint glasses, in skilful combination, by trustworthy makers, are sufficiently satisfactory for all practical purposes, the cost being also not over a third of the newer apochromatic objectives. As time goes on, improved systems and combinations of lenses are constantly being invented, much use being made of the older crowns and flints combined with the new glass in the same system; and, with the increasing technical skill in smelting, and a better appreciation of the physics of optics, for which the Germans must be given the chief credit, the cost will in all probability, in the near future, be placed within the means of all those workers desiring these improved "oculars" and "objectives." The number of the varieties and kinds of glass used for optical purposes is now upward of sixty-six, and additions to the list are frequently reported. The microscope is no longer a toy, nor is its use solely relegated to laboratory workers, but it has become an essential part of the modern properly equipped and successful physician (successful in appreciating the character of disease); of the workers in all branches of natural science; for detecting adulterations in foods, in water, in fabrics, the forging of documents and the imitations of handwriting; in fact, this instrument is of the first importance in all later educational and scientific work. When we reflect upon the advance in scientific procedures in recent times by means of spectrosopes, telescopes, and the various optical instruments now in general use, and their extraordinary improvement within the last decade, the character of the advance in our knowledge of glass-making is better appreciated.

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Prescribing Opticians.—According to a decision recently given by a judicial authority at Havre, an optician who gives a patient advice as to the condition of his eyes, and prescribes glasses to remedy defective vision, is guilty (according to French law) of the illegal practice of medicine just as if he had ordered remedies or given medical advice without possessing a diploma recognized by the law.

**LEGISLATION IN PENNSYLVANIA ON MEDICAL
AND HEALTH MATTERS DURING THE
SESSION OF 1891.**

By HENRY A. RILEY, A.B., LL.B.,
OF NEW YORK.

THE special subject attracting the attention of the profession prior to and during the late session was the passage of some act regulating the examination of applicants for medical practice. Several bills were prepared and earnestly advocated, but no law was passed, and the struggle will no doubt be started again when the Legislature meets next year.

An important law was enacted, providing for an Asylum for the Chronic Insane. A board of five commissioners was authorized to be appointed by the Governor to select a site and erect the buildings. The site was to be convenient to the other asylums for the insane, and to contain not less than five hundred acres of land. The cost of the land and buildings was not to exceed \$500,000, and the plans for the buildings were to be approved by the Board of Public Charities. The time for erecting the buildings was fixed at three years, and when finished they were to be turned over to a permanent board of nine trustees. The asylum is to be wholly devoted to the chronic insane, and persons who have been insane for any period less than a year are not eligible for admission.

A commission of five persons, including the Governor, was authorized to select a site for a quarantine station on the Delaware River, remote from the centers of population.

It was also authorized to inquire into the feasibility of a joint quarantine for the protection of all parts of the Delaware River and Bay, to be controlled by the several States bordering thereon. A report was directed to be made to the next Legislature.

An appropriation of \$383,852.02 was made to repay the amount placed in the hands of Governor James A. Beaver by the People's Bank of Philadelphia and William H. Kemble, to meet the expenses incurred by the Johnstown flood. This amount was loaned without interest, and entirely on the promise of Governor Beaver to use all honorable means to procure the repayment by the State when the Legislature should meet.

The general run of decisions in the various States has been to the effect that bequests for the care of graves are void if made in perpetuity, as not being for a charitable use. The Legislature, however, passed two laws on the subject, which are certainly of importance and interest. One declared that property left for the care and maintenance of cemeteries and graveyards, or for graves and monuments therein, or for erecting the same, shall be

deemed to be left for a charitable use, and shall not be void on the ground of tying up property in perpetuity.

The other law allowed incorporated cemetery companies to accept, by deed or will, devises or bequests in trust for the care and decoration of family burial lots, vaults, or graves, provided the cemetery companies report to the Court of Common Pleas of the county, and obtain the approval of the court to the investment of the principal sum of the bequests.

A very elaborate and detailed law for the proper management and working of coal-mines, so as to secure the best protection for miners, was passed, after having been considered and approved by a commission consisting of mine inspectors, mine-owners, and practical miners. Some of the provisions of the law are as follows: The anthracite coal-fields are divided into eight inspection districts, with an inspector at the head of each. The inspectors are appointed by a board of examiners consisting of five members, three of whom are practical coal-miners, and two reputable mining engineers.

The salary of each inspector is \$3000, and he is required to visit the collieries in his district as often as his duties will permit, or exigency requires, and he must see that every necessary precaution is taken to secure safety.

He must visit the scene of every accident, for the purpose of examining into the particulars, and attend all inquests on the bodies of persons killed at the mines.

An annual report is to be made to the Secretary of Internal Affairs, enumerating accidents, the condition of workings, ventilation, etc. The inspectors have the right to enter any mine, either by day or night, and must be supplied with accurate maps of the mines by the owners.

There must be two openings from each vein or seam of coal, for safe and distinct means of ingress and egress.

Mine-owners shall provide at the collieries an ambulance with two stretchers, for the purpose of conveying to his home or to a hospital any person injured. The ambulance must be provided with easy springs, bedding, spring mattresses, etc.

No boy under fourteen is allowed to work in a coal mine, and no woman or girl of any age. Boys under twelve cannot be employed in the outside workings.

A considerable portion of the law is taken up with detailed directions for ventilation and the regulation of blasts. Ventilating currents must be forced along the face of workings in sufficient volume to sweep away smoke and noxious gases. Inlet and outlet passages are to be separate. Doors must open automatically, and main doors must have an atten-

dant. In mines generating explosive gases, the foreman must examine, every morning, all working places to see if they are safe.

In cases of accident resulting in death, the inspector may notify the coroner to hold an inquest, if he deems it necessary.

If the inspector finds anything about a colliery defective or dangerous, he must give written notice to the mine-owners to remedy it. If the owners object to the carrying out of the notice, they can demand a board of arbitration, which shall within forty-eight hours decide the matters submitted to them.

If the owners or superintendent are negligent, and persist in refusing to carry out reforms demanded, they are liable to a fine of \$500, and imprisonment not to exceed three months.

It is said that the crematory at Pittsburg has incinerated more bodies than any other in the United States, and it is not surprising that the Legislature passed a law requiring that before every cremation a permit shall be obtained from the Board of Health or local health authorities. Before this permit is issued the physician or coroner must file a written certificate, giving all the facts of death and the usual statistics.

The dairy and cattle interests were favored by a supplemental act, requiring all imitations of lard to be labelled "Compound Lard," in letters half an inch long. The penalty was fixed at \$50 for the first offence, and \$100 for subsequent offences.

The Pharmacy Law was amended so as to permit the legal representatives of a deceased registered pharmacist to carry on the business under the charge of a qualified and registered assistant.

The usual large appropriations were made for the State hospitals and public institutions, and many special bills were passed for permanent improvements, and for aiding in the establishment of new institutions. A good many appropriations were, however, vetoed by Governor Pattison, either on the ground that they were in excess of the amounts recommended by the Board of Public Charities, or had not been recommended at all. A further ground of disapproval in some cases was that the institutions were not under the control of the State. Some of the appropriations are of general interest, and are as follows: \$14,650 was appropriated for cottages and maintenance at the Bituminous Coal Hospital, at Connellsville, and \$13,000 for the same purposes at the Philipsburg Hospital; \$15,000 was appropriated for erecting and furnishing the Chester Hospital, at Chester, provided \$5,000 was raised by private subscription, and a site given worth, at least, \$4,500; \$12,500 was given the Shenango Valley Hospital, at New Castle, for erecting and furnishing new buildings, provided \$10,000 be raised and paid into the treasury of the hospital by private subscription;

\$10,000 was appropriated to the Pottstown Hospital and Dispensary for new buildings, on the condition that suitable grounds be secured, and \$10,000 raised by private subscription; the Carbondale Hospital Association received \$10,000 for new buildings on the condition that a similar sum be raised by private subscription. The Pittston Hospital Association was to receive \$15,000 for construction and furnishing, provided the Association should be legally incorporated, and the treasurer give a bond. Further conditions were also made that a site of not less than three acres be secured, and \$5,000 subscribed by private persons. Some of the public institutions received appropriations for new buildings, etc. The Pennsylvania State Lunatic Asylum, at Harrisburg, was granted \$20,000 for the purchase of additional land, and \$10,000 for a lighting plant. The University of Pennsylvania received \$20,000 for the extension and betterment of buildings for hospital purposes. The Williamsport Hospital was given \$10,000 a year for two years, provided no distinction was made in the admission of patients, on account of color, nativity, or religion. The Homeopathic Medical and Surgical Hospital and Dispensary, at Pittsburg, received \$15,636.52 for a deficiency, and \$15,000 a year for two years, on condition that ten free beds be maintained, to be occupied by persons recommended by the Mayor or Poor Board; \$12,500 was appropriated for the completion and furnishing of an infirmary at the Pennsylvania Training School for Feeble-minded Children, at Elwyn, and \$12,500 for new buildings for feeble-minded girls afflicted with epilepsy; \$15,000 was appropriated for building a home for the training of deaf children before they reach school age, and a commission of two persons was appointed to select a site and prepare plans, etc.

ORIGINAL LECTURE.

POLIOMYELITIS.

A Clinical Lecture delivered at the Arapahoe County Hospital, October 24, 1891.

BY J. T. ESKRIDGE, M.D.,

NEUROLOGIST TO THE ARAPAHOE COUNTY, ST. LUKE'S, AND DRACONESS HOSPITALS, DENVER, COLORADO.

GENTLEMEN: The case I wish to study with you today presents a feature of especial interest on account of the new diagnostic point between multiple neuritis and poliomyelitis that is beautifully illustrated:

A. I., twenty-two years of age, an expressman for the past five years, has suffered with paralysis of the left arm during the last four or five weeks. His family history is unimportant. His health was always good until the present illness. He has indulged only occasionally in alcohol. He suffered with two venereal sores in 1888, and had gonorrhea in 1889. He denies over-indulgence in venereal habits. Five weeks ago he began to feel

pain in the left elbow and shoulder. The pain was sharp at times, especially at night, but usually it was dull in character. The pain has remained about the same up to the present time. He has simply a sore feeling just above the elbow and in the shoulder. There are no shooting pains or numb sensations. He has suffered with pains in the back of the neck, but only for the last few days. These post-cervical pains first developed nearly five weeks after the beginning of the shoulder pain. Shortly after the first appearance of pain in the arm he noticed that it was difficult for him to use the part, but he is unable to say whether the loss of power was entirely due to paralysis of the muscles or partially caused by the pain felt on trying to move the extremity. He had no difficulty at the time in using the left forearm and hand, so that he feels certain that the loss of power was above the elbow. He consulted a physician at that time, who, without an examination of the arm, diagnosed rheumatism and treated him for it. Subsequently, he presented himself at the clinic of the Arapahoe County Hospital, and Dr. Baker, suspecting neuritis and failing to make a diagnosis satisfactorily to himself, brought the patient to me. I made a careful examination at that time, and as his symptoms differ but little to-day from what I then found them to be, I shall ask you to study the case with me as I make the examination before you. The history, to state it succinctly, is pain, without apparent cause, beginning in the left shoulder and elbow, with some pain in the arm above the elbow, loss of motion coming on at about the same time and involving the muscles of the upper arm and shoulder, extending over a period of about five weeks.

Examination shows that there are no symptoms of ataxia in the legs, the knee-jerks are normal, and there is no ankle-clonus. The muscles of the lower limbs are well preserved and fairly strong. The dynamometer registers: right, 128; left, 88. The muscles of the right arm are quite strong. He is unable to abduct the left arm from the chest, owing to complete paralysis of the deltoid, but he can swing the arm backward or forward, bend and extend the arm at the elbow, and open and shut the hand with considerable force. All the muscles below the elbow seem to be in nearly a normal condition. The biceps and triceps are fairly strong; the deltoid is the only muscle that is completely paralyzed. There is partial paralysis of the trapezius, pectoralis major, and serratus. The last three muscles are considerably wasted, but not as markedly so as the deltoid. Measurements: Right forearm, $9\frac{1}{4}$ inches; left, $8\frac{1}{4}$; upper arm in contraction, right, $10\frac{1}{4}$; left, $8\frac{3}{4}$; over the deltoid high up in the axillary space, right, $10\frac{3}{4}$; left, $8\frac{3}{4}$. Reflexes of the left forearm, normal; but of the deltoid, biceps, and triceps, absent. Tactile sense is normal throughout the arm and hand; neither are there spots of tenderness anywhere over the arm, although the patient complains of pain in various portions of the arm. When the muscles are relaxed, the joints, especially those of the elbow and shoulder, can be moved freely without giving rise to the least pain. He complains of considerable pain in the shoulder, but no tender spots can be found on pressure, and the muscles that seem to be the seat of pain contract without giving rise to discomfort.

One point to which I wish to direct your attention

especially is the action of the pectoralis major muscle. You are aware, from your anatomic studies, that this muscle is composed of two parts, the superior or clavicular fibers and the inferior or sternal fibers. When the arm is held in the horizontal position in front of the chest the superior portion of the muscle aids in further elevating the arm or in maintaining the arm in that position when weights are held in the hand. This portion of the muscle, when it acts alone, is an elevator of the humerus. When any resistance is offered to the arm in its descent from the elevated position, the inferior fibers of the great pectoral muscle contract and enable it to overcome this resistance, so that the lower portion of the muscle when acting alone is a depressor of the humerus. Now, if I take this man's right arm, which is strong and healthy, and abduct it from the side to the horizontal position, carry it forward until it is about at right angles with the front of the chest, and then request him voluntarily to carry the arm in front of the chest, you notice the superior fibers of the pectoralis major contract and carry the arm to this position. If, now, I resist the arm in this movement and request the patient to exert force to overcome the resistance, you see that the inferior and superior fibers come out prominently in contraction to enable the arm to overcome the resistance; so that we find when the superior and inferior fibers of this muscle act separately, one set elevates the humerus and the other depresses it, but when they act in association with each other they have one function in common, and carry the arm across the front of the chest. Now, let us study the action of this muscle on the affected side. On elevating the left arm to the horizontal position and bringing it to a point about midway between the lateral and anterior aspects of the chest, I request the man to further elevate the arm. He makes an effort, but there is no contraction of the superior fibers of the pectoralis major. While holding the arm in this position, I request him to depress it and immediately the inferior fibers come out in vigorous contraction and depress the arm with considerable force. On returning the arm to the position from which the inferior fibers have just depressed it, I now carry the arm a little more in front of the chest and request him to bring the arm across the front of the chest, and at the same time I offer slight resistance to this movement. In overcoming this resistance the superior and inferior fibers of the pectoralis major contract quite vigorously to bring the arm into the suggested position. You observe, then, that while the superior fibers are unable to contract in efforts to elevate the arm beyond the horizontal position, they act quite vigorously in association with the inferior fibers in carrying the arm across the front of the chest, so that we find the superior fibers of this muscle paralyzed for one movement and not for another. Now, what is the significance of this form of paralysis? Dr. Beevor, of England, in an article published in a recent number of *Brain*, claims that this form of paralysis in all probability can only be caused by lesions in the spinal cord or its nerve-roots, and not by a lesion in the brain or nerves. If these statements set forth by Dr. Beevor are proved by subsequent observation to be correct, they will become of very great importance in differentiating certain lesions of the nerves from lesions of the spinal cord.

We will endeavor now to make a diagnosis by exclusion, to see where we can locate the lesion in this case. With the history that this man gives, the first lesion suggested is neuritis. The pain of which he has complained from the first until the present, and the weakness of the arms, point to this condition. This view is still further strengthened by the fact that he was compelled in his daily occupation to lift heavy weights and carry them on his shoulder, which might have bruised the circumflex nerve, which, you know, supplies the deltoid, the muscle most affected in this case. The points that most militate against this view are the absence of tenderness and the preservation of sensation at all parts of the arm and shoulder. One of the most prominent symptoms in acute inflammation of nerves is sensitiveness of the nerve and of the muscle supplied by the nerve. Further, if this nerve were sufficiently injured to cause absolute paralysis of the deltoid, sensation would be affected in the cutaneous distribution of the nerve; but this we find not to be the case. There is no disturbance in any portion of the arm or shoulder in any form of sensation. Again, the pectoralis major muscle is supplied by two nerves—the internal and external anterior thoracic. These would not likely be injured in contusions involving the circumflex. And yet, again, it is hard to conceive that the lesion of the nerves resulting in paralysis would affect the muscle for one movement and not for another. Theoretically, at least, we would expect that nerve-lesions would affect to a greater or less extent all of the muscular fibers supplied by the injured nerves. It seems to me that we can exclude neuritis in this case.

From the absence of any history of cerebral symptoms, such as headache, ocular disturbances, affection of the facial muscles, either by occasional spasms or paresis, and the absence of any twitching of the muscles of the arm, and the limitation of the paralysis to half of the muscles at the shoulder, we are enabled to exclude brain-lesion.

The acuteness of the trouble makes it unnecessary to consider any of the chronic wasting diseases affecting the muscles by paralysis. We have left, then, but the spinal cord in which to place the lesion. In the absence of any sensory phenomena we are justified in concluding that the trouble is located in the cells of the left anterior cornua of the cord. As the deltoid, the muscle most affected, yet responds to a strong faradic current, the prognosis is good.

The treatment will consist of massage, electricity, and of strychnine, combined with a good nutritious diet. As the muscles respond to the faradic current, we will have this current applied, with slow interruptions, to the muscles for ten or fifteen minutes each day. We will have the muscles of the arm thoroughly manipulated once daily. Strychnine may be given by the mouth or hypodermatically. We will first try it by the mouth, beginning with $\frac{1}{10}$ of a grain before each meal, gradually increasing to $\frac{1}{8}$ or $\frac{1}{4}$ three times daily. If improvement after a while should cease, I will then direct $\frac{1}{4}$ of a grain to be injected into the deltoid muscle once daily. I have employed the hypodermatic method of using strychnine with very satisfactory results in certain cases of paralysis, and frequently have given $\frac{1}{10}$ of a grain daily, but such a quantity should not be given until the dose is gradually increased, so that the patient will bear it without any unpleasant effects.

CLINICAL MEMORANDA.

A UNIQUE CASE OF RICKETS WITH SYNCHRONOUS HEART-CONTRACTIONS AND INSPIRATORY ACTS, EACH 54 PER MINUTE.

By C. W. LEIGH, M.D.,

FORMERLY HOUSE SURGEON AND INSTRUCTOR IN CHICAGO POLYCLINIC;
CAPTAIN AND ASSISTANT SURGEON, SECOND INFANTRY,
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THE patient, a male child, two years and two months old, suffered, as the mother stated, with shortness of breath; it was not disposed to play or exercise; it was mentally somewhat dull, although possessing a bright, intelligent face. It was easily frightened, did not have much appetite, drank water liberally during the night, and after doing so frequently coughed severely and then vomited. He had been constipated since birth, and had a habit of scratching or picking his nose; he had also cold sweats, and worried and cried during the night-time. In the third month of his life umbilical hernia appeared which had about disappeared at the time of the first examination.

Upon examination, the child was found plump in form and well nourished; the face somewhat pale, but intelligent in expression; the hair a very light yellow—almost white; the eyes blue. The head was large, the forehead somewhat projecting, as in rickets. Both anterior and posterior fontanels were open. There was no tabes cranii. The eyes were large, somewhat prominent, and the pupils normal. The mouth emitted a fetid odor due to badly decayed teeth and suppurating gums. There were no Hutchinsonian teeth. The roof of the mouth was highly arched. On the chest and abdomen, especially on the sides, there were some slightly enlarged veins. The middle dorsal vertebrae were slightly prominent; this prominence was not due to Pott's disease, as movement was perfectly free, and pressure from above downward or from behind forward caused no pain. There was a marked constriction of the ribs in front, extending from the fourth to the seventh. The prominence of the cartilages (Rosencranz) was marked in the upper ribs. The knee-joints were slightly enlarged, but the other joints were normal.

The apex-beat of the heart could be felt at the lower border of the tenth rib and a half-inch to the left of the nipple. The heart boundaries were: upon the right side, the inner border of the sternum; superiorly, the fourth intercostal space; and externally, the mammillary line. The tricuspid sound of the heart was absolutely normal and distinct; the mitral was also normal, but not so distinct; the aortic could not be heard on account of the exaggerated respiratory murmur. The pulmonary second sound only could be heard. There were no heart-murmurs. The pulse was 54 per minute.

Normal bronchial breathing could be heard over the entire chest, except that it was exaggerated. The percussion note was normal. The respirations numbered 54 per minute.

The spleen seemed somewhat enlarged; however, the apparent enlargement may have been due to downward displacement caused by chest constriction. The liver-dulness commenced at the sixth rib. There was no evidence of any pathologic condition of the kidneys.

The mother of the child is a native of Germany, forty-three years old, large, and somewhat fleshy. She states she has always been healthy, except for a period of time during her youth, when she was troubled considerably with sore-throat, and at the age of fourteen she had a "nervous fever," from which she lost her hair. She never had a skin-eruption, and there are no symptoms of tuberculosis. She has given birth to twelve children. The first lived five days; the second, four months; the third, three months; the fourth and the fifth are living and in perfect health; the sixth lived six months; the seventh was born dead at term; the eighth was born dead; the ninth is living and in fair health; the tenth was born dead; the eleventh is living, and the twelfth is our patient.

The father is also a German, fifty-three years of age; he is small and slight in stature and weak. He has had three attacks of inflammation of the lungs; he has never had sore-throat, loss of hair, skin-eruption, or any other symptom of syphilis.

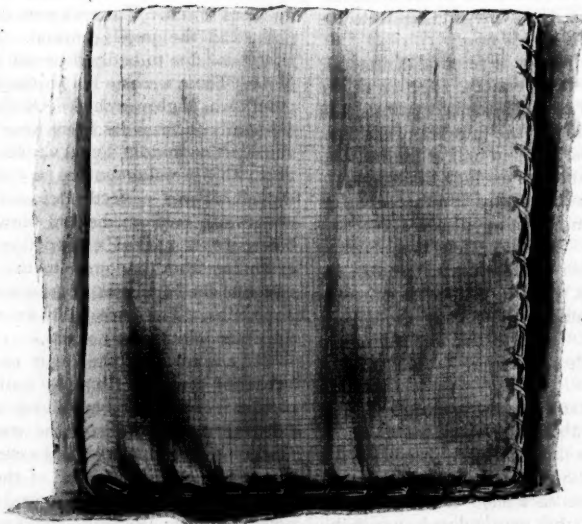
The very remarkable and interesting point to be observed in this case is that the heart-contractions and the inspiratory acts are absolutely synchronous, each 54 a minute—a very rapid respiration and a very slow pulse. I have searched the literature in vain for a similar case, and I am convinced that it is the only one of its kind on record.

PADS OF ABSORBENT GAUZE AS A SUBSTITUTE FOR FLAT SPONGES IN ABDOMINAL SURGERY.

BY WILLIAM EASTERLY ASHTON, M.D.,
GYNECOLOGIST TO THE PHILADELPHIA HOSPITAL.

IN this era of surgical progress, when success so much depends upon technique and care, the aim of all operators must be to render their operations as simple as is conformable with the well-defined and strict laws of asepsis. With this object in mind, I desire to call attention to gauze pads as a substitute for flat sponges in all forms of abdominal and pelvic surgery.

The pads are made of the ordinary unsized absorbent gauze in use in all hospitals for surgical dressings. I employ two sizes: a large pad, 9 inches square, which is used in abdominal work, and a small one, 4½ inches square, for pelvic cases. Each pad is composed of sixteen layers of gauze, folded together in such a manner that the edges cannot fray. The large pad is made as follows: A single layer of gauze a yard square is folded at each extremity upon itself, so that the folds meet at the middle. This makes two layers of gauze, oblong in shape, the extremities of which are now folded over so that they meet in the middle. There are now four layers and the shape of the pad is square. This is then folded upon itself, making again an oblong pad, having eight layers.



The child was presented to me in the summer of 1888, during my service at the Chicago Polyclinic. He remained in the same condition until his death, which occurred in July, 1890, at a time when I was absent from the city on a vacation. The parents state that he was suddenly seized with a "fit," which was rapidly followed by others, and death resulted in less than three hours. Unfortunately, no post-mortem examination was made; whether it would have furnished an explanation of the singular pathologic condition is, of course, a question.

Folding it once more upon itself, the pad is then composed of sixteen layers and measures 9 inches square. To keep the pad in shape and the layers from becoming separated the edges are stitched together with ordinary sewing cotton. The small pad is made in a precisely similar manner, except that a piece of gauze 18 inches square is used.

The advantages of these pads over sponges are very great. Flat sponges are not only expensive, but it requires great care and trouble to render them aseptic.

Again, they can be used only a few times, as the chemical processes through which they must pass in cleaning after an operation render them rotten and unfit for use. Indeed, it is a serious question—one that for myself I have long since decided in the negative—if a sponge should ever be used a second time in abdominal work. Certainly, the best results are obtained in this branch of surgery by those operators who are extravagant in the use of their materials and who never use ligatures or sponges left from a previous operation. Finally, sponges necessarily swell when brought in contact with fluids, and consequently they do not remain well in the position in which they are placed. On the other hand, gauze pads are inexpensive, the material costing only $2\frac{3}{4}$ cents a yard; they are readily made, and easily rendered aseptic by simply placing them in a steam sterilizer for forty-five minutes prior to using them. Again, they remain well in place, as they retain their shape perfectly and are much easier to pack about the seat of operation than are sponges.

A CASE OF LONGITUDINAL FRACTURE OF THE PATELLA.

BY A. H. FRASER, M.D.,

LICENTIATE OF THE ROYAL COLLEGE OF SURGEONS, EDINBURGH,
OF HARPER, KANSAS.

THE literature concerning fractures of the patella other than transverse is so meager that a case of longitudinal fracture becomes one of interest and importance. Dupuytren only met with four cases, and Hamilton, in his book on *Fractures*, gives 127 cases wherein the kneecap was fractured, 106 being transverse, some oblique, stellated, and comminuted, but longitudinal fractures are not mentioned.

On the night of September 19th last, I was asked to see a case of gunshot wound of the left knee, with my friend, Dr. W. G. Muir, of Harper. The patient was a young man, twenty-four years of age; there was an external wound one-eighth of an inch to the outer side of the middle line of patella; the bone was split into two almost equal parts; the bullet, having taken a downward and slightly outward direction, was found just below the outer head of the femur, lying transversely and at right angles to the shaft of that bone. The injury took place at very close quarters, the patient's right wrist being burned by the powder while endeavoring to turn aside his assailant's pistol. It seems almost incredible that a man could run after receiving an injury such as that described, but the fact remains that he not only did not fall, but also ran a distance of fifty yards at a good pace; it may be that "fear lent him wings." A second shot was fired at him as he ran, and grazed the lower edge of the right buttock, but only had the effect of accelerating his speed. The patient being fully placed under the influence of chloroform, the original wound was somewhat enlarged and an attempt was made to seize the bullet with a pair of forceps, but it was found that the detached outer fragment was too much in the way, and the bullet could be felt just above the outer tuberosity of the tibia; an incision was made over that point, and a 38-caliber revolver bullet removed. The limb was kept extended; the edges of the fractured patella were brought firmly into apposition, and retained by means of adhesive plaster; after

being washed out with warm carbolic lotion, a drainage-tube was inserted into the lower wound, which was dressed with iodoform and dry cotton, the whole being enveloped in a figure-of-eight bandage. Uninterrupted recovery took place; the upper wound healed by first intention; there was no rise of temperature; there was extraordinary freedom from pain.

The joint was daily syringed out with warmed carbolic lotion; the drainage-tube was removed on the tenth day—there being less than two teaspoonfuls of pus in the whole course of the case. Three weeks after the injury the patient was up and going around on crutches. I had an opportunity of seeing the case three months afterward, when perfect bony union had taken place; the man could bend one knee as well as the other, and walked without any limp and quite unaided by an artificial support of any kind. In all probability, had a man received an injury to the knee-joint such as is here recorded involving the knee-joint and destroying the bursa, twenty years ago, it would have been considered a fit case for amputation; whereas now, with antiseptic dressings and thorough cleanliness, the whole thing is healed up within three weeks.

MEDICAL PROGRESS.

Unusual Phenomena of Epilepsy.—In an interesting address, WILKS (*British Medical Journal*, No. 1618, p. 2) reports a number of unusual phenomena observed in connection with epilepsy, the significance of which might readily escape the unobservant. He takes the view that the association of loss of consciousness, convulsions, and coma is not an essential feature of the disease. In some cases, there is only a strange feeling in the limbs or a sudden pain in some part of the body; in others, there is an aberration of the senses or a perturbation of an important organ; sometimes there is only a strange mental disturbance. Sometimes, the aura constitutes the main symptom of the attack; suspicion should be aroused if a patient complains principally of a sore tongue. There may be aberration or confusion of mind, the patient committing acts of which he subsequently has no recollection. The special senses or motility may be transitorily impaired or lost. In some cases, coma or sopor may be the only discoverable manifestation. Sometimes it would appear as if the attack were long drawn out—that is, instead of being shock-like and intense, it is protracted in duration and correspondingly mild in intensity. Wilks is averse to admitting any relationship between epilepsy and migraine. In his experience, the one does not replace the other; nor are both common in the same family. In the one, the onset is sudden, with convulsions, dilated pupil, congestion, and often, heat of body; in the other the onset is gradual, with contracted pupil, cold skin, and sickness. According to the observations of Wilks the epileptic does not suffer from headache.

Hysterical Mutism with Agraphia.—COURMONT (*Revue de Médecine*, 1891, No. 10, p. 895) has recorded the case of a man, forty years old, who, at twenty-two, after excitement, lost consciousness for thirty hours, and for twenty-four hours subsequently could not speak, but laughed constantly. Recovery took place in the course

of several days. On arising one morning, when thirty-two years old, the man found that he could move his left arm and leg only with difficulty. The condition improved in the course of a few days, but subsequently some degree of weakness of the left side was from time to time observed. Six months before coming under observation, there had been temporary loss of speech. Four months later, the occurrence was repeated, the face and tongue then deviating to the left. The condition disappeared in the course of a day. A month before the man presented himself, he again lost the faculty of speech, though he retained the ability to write. At the end of two weeks, speech returned for two days; then both faculty of speech and ability to write were lost. By gesture the patient indicated the existence of pain in the head, especially at the upper part of the left temporal region. He comprehended written and spoken language. There were thus no word-deafness and no word-blindness. The patient could neither transcribe nor write by dictation. There was no palsy. There was slight anesthesia upon the left side. The right field of vision was normal; the left was diminished about one-half. On the night after coming under observation, the condition spontaneously disappeared, and on the following day the man could talk volubly.

Perforative Aortitis.—OLIVER (*Lancet*, No. 3558, p. 1033) has recorded the case of a man, aged thirty-six years, who thirteen years previously had an aggravated attack of rheumatic fever. Murmurs indicative of the existence of aortic obstruction and incompetency, of mitral incompetency, and of pericarditis were heard and the heart was hypertrophied. Some time later the patient rather suddenly died. At the autopsy, the pericardium was found occupied by a clot entirely surrounding the heart. The heart itself was dilated and hypertrophied. The mitral orifice was dilated, the valves normal. The aortic valves were incompetent. The aorta, just beyond its origin, presented a pouch-like dilatation. Over a small area between the mouths of the coronary arteries, extending upward for about an inch and a half, the lining membrane of the aorta was red, softened, and ulcerated, and in two places gangrenous. From the center of this area a small pouch bulged outward. The walls of the pouch were thin and soft, and perforated at its base by an opening as large as the head of a pin. An atheromatous plate lay close to the orifice of the left coronary artery. Microscopic examination confirmed the macroscopic evidences of the existence of an ulcerative aortitis, and disclosed in addition the presence at the focus of inflammation of considerable numbers of bacilli resembling those of anthrax. There was no history or knowledge of infection.

A Needle in the Trachea.—At a meeting of the Laryngological Society of Berlin, SCHORLER (*Berliner klin. Wochenschrift*, 1891, No. 44, p. 1079) presented a tailor who, while at work, had drawn into the trachea a threaded needle that he was holding in his mouth. The protruding threads were secured by an additional thread, and attempts were made to withdraw the foreign body, but without success. On examination with the mirror, the needle was found impacted in the trachea at its bifurcation, one extremity being deeply imbedded in the

walls of the trachea, and the other being caught below a ring of cartilage on the opposite side. As the patient began to display signs of fatigue, and as the symptoms were not threatening, further manipulation was postponed to the following day. Repeated attempts at removal failing, a laryngeal sound with a hook-like extremity was introduced, for the purpose of dislodging the needle. A little manipulation released the foreign body, which was then readily withdrawn. In the course of three or four days the patient was restored to his usual condition.

Treatment of Diphtheria.—SMITH (*The Practitioner*, No. 282, p. 430) has successfully employed carbolic acid by continuous inhalation in seventeen cases of diphtheria. He ascribes the good results largely to the method of application. The patient is placed in bed, lightly clad and made to maintain the recumbent posture. Over him is placed a tent, made of a sheet, closed on all sides except in front. Cloths, about a foot square, soaked with a mixture of carbolic acid, one part, oil of eucalyptus, one part, and turpentine, eight parts (or less, according to indications), are hung about the patient, while the surrounding air is constantly kept impregnated with the vapor of steam. The cloths are to be re-soaked as they become dry. The patient should breathe through the mouth. If necessary, the nostrils may be loosely plugged with cotton-wool. The inhalations do not counter-indicate the employment of other therapeutic measures. Should there be depression, alcohol, digitalis, belladonna, or ammonia may judiciously be administered.

Distinctions Between the Bacillus of Typhoid Fever and the Bacillus Coli Communis.—At a meeting of the Société de Biologie, DUBIEF (*La Médecine Moderne*, No. 43, 1891, p. 745) reported that in making comparative experiments with the bacillus of typhoid fever and the bacillus coli communis, he found that both organisms caused the fermentation of glucose in about equal degree, the colon-bacillus, however, giving rise to the formation of a larger percentage of lactic acid. In consequence of this difference, the typhoid-bacillus but slowly causes the coagulation of milk, while the colon-bacillus produces the same result more speedily.

Before the Académie de Médecine, ROUX and RONDET (*La Médecine Moderne*, 1891, No. 43, p. 741) maintained the identity of the bacillus coli communis and the bacillus of typhoid fever. The apparent differences that exist are considered as dependent upon the varying conditions to which the organism may be exposed.

Pyoktanin in Ophthalmic Practice.—As a result of the employment of pyoktanin for a period of three months in the ophthalmic service of Bacchi, RESCOUSSIE (*Annales de la Policlin. de Paris*, 1891, No. 12, p. 549) concludes that the agent is an excellent antiseptic in ocular surgery—to be preferred to all others. It exercises a favorable influence upon simple conjunctivitis, and especially upon granular conjunctivitis. It is of doubtful efficacy in case of rebellious ulceration of the cornea, and is almost useless in case of purulent ophthalmia.

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"INFECTION" OR "CONTAGION?"—A QUESTION OF DEFINITION.

Ask anyone that has not previously made a special study of the matter, what is understood, or what should be understood, as the distinctive difference of definition between the two words, "infection" and "contagion," and it will soon be discovered that he has either no clear opinion, or an erroneous opinion about it. Then, go to the dictionaries, and it will be found that no distinction exists, or that an attempted distinction, either in logic or in fact, does not hold.¹

¹ To illustrate the unfortunate contradictions and indefiniteness of lexicographers and writers we append several excerpts:

INFECTION: The act or process of infecting, formerly applied to communication of disease without personal contact; now often used as synonymous with contagion, but is usually understood to refer to things rather than to persons. A disease is said to be infectious when it can be communicated to another person. **CONTAGION:** The process by which disease is transmitted. If by direct contact, it is called personal contagion. If indirect, it is often called infection. **CONTAGIOUS:** Capable of communication from one person to another, either by actual contact or through the air.—BILLINGS.

CONTAGION: The communication of disease from one individual to another by means of direct or mediate contact, or, as used by some writers (in the sense of infection), by effluvia, etc. 2. The material cause or virus of a contagious disease. **INFECTION:** The act or process by which disease is set up in an organism by the implantation of morbid germs from without, or in a part of the organism by the conveyance of such germs from an-

This is unfortunate and confusing. If the two words are identical in meaning, one is unnecessary, and should fall into disuse. But everybody has a

other part. Infection differs from contagion in the fact that the germs are not necessarily transferred from another organism, and, as used by some writers, in the further fact that when they are, contact of the two organisms is not requisite.—FOSTER.

INFECTION is often used in a definite and limited sense, of the transmission of affections without direct contact of individuals or immediate application or introduction of the morbid agent, in contradistinction to contagion, which then implies transmission by direct contact.—WEBSTER.

INFECTION: Communication of some quality, property, or state, whether good or bad, by contact, diffusive, or emanative influence, example, etc. The communication of disease or of disease-germs, whether by contact with a diseased person, or with morbid or noxious matter, contaminated clothing, etc., or by poisonous exhalations from any source.—THE CENTURY.

INFECTIOUS: Communicable by infection; easily diffused or spread from person to person or from place to place, as a disease, a moral influence, or a mental condition; specifically applied to diseases which are capable of being communicated from one to another, or which pervade certain places, attacking persons there, independently of any contact with those already sick. Infectious diseases include contagious and miasmatic diseases.—THE CENTURY.

A distinction between contagion and infection is sometimes adopted, the former being limited to the transmission of a disease by actual contact of the diseased part with a healthy absorbent or abraded surface, and the latter to transmission through the atmosphere by floating germs or miasmata. There are, however, cases of transmission which do not fall under either of these divisions, and there are some which fall under both. In common use no precise discrimination of the two words is attempted.—THE CENTURY.

From an early period it has been observed that certain diseases are contagious or "catching," by direct contact with the sick person, or by means of clothing or buildings, which transmit the *materies morbi*. When actual contact took place the disease was called "contagious"; when it was transmissible by the air, it was given the wider name of "infectious."—FAGGE'S *Practice of Medicine*.

Dr. T. Mitchell Prudden defined the word "contagion" as an "invasion and reproduction within the body of pathogenic organisms." It was not necessarily an invasion by bacteria, because other organisms may be elements of contagion, as, for instance, in malaria. It was encouraging to note that the word "contagious" no longer refers to infinite possibilities in the unknown, for the contagium in an infectious disease is the particular pathogenic microorganism itself, whose advent in the body ushers in those reactions of the body cells that we call the disease; and an infectious disease is contagious when the contagium, under the ordinary conditions of life, can be freed from the body of a diseased person and be conveyed to the body of another, in such a condition as to be able to reproduce the disease in this second individual. Hence, the old distinction between contagion and infection has become impracticable and valueless, as it is now known that the communicability of an infectious disease is largely dependent upon the physical properties of the contagia, which determine the manner in which they are spread from body to body or from place to place. The common conception of a contagious disease is one which taints the atmosphere surrounding the patient, but this is not true of any of the ordinary diseases except the exanthemata. Thus, typhoid fever, diphtheria, and tuberculosis may be highly contagious, depending upon the care or lack of care taken in disposing of the exudates and discharges.—*New York Academy of Medicine*, January 21, 1892. (See THE MEDICAL NEWS, February 6, 1892, p. 164.)

more or less vague idea that some difference of meaning does exist, at least in the minds of the learned, but that the ordinary mortal has not succeeded in grasping it. The simple fact, however, appears to be that certain writers have endeavored to make distinctions of different kinds, but that such distinctions have not been univesrally accepted. Hence the general mystification.

This unfortunate haziness of mind in part arises from the patent fact that Science is not clear as to the means of communication of the diseases vaguely classed as specific, infectious, contagious, or zymotic. The difficulty of definition of terms is, in part, due to our incertitude as to facts; we do not know whether the specific viruses of certain diseases are transmissible only by direct contact, or also by certain intermediate agents, and moreover, by just what agents. There is also doubt whether certain diseases are due to a chemic or to a living agent or cause; and, finally, there is or may be some doubt as to whether or not a pathologic condition is purely idiopathic or non-transferable.

It is probable that this lack of certainty as to specificity or transmissibility of disease will long and possibly forever persist. In the meantime it is extremely important that clearness be provisionally attained by attaching such precise definition to terms as will make mutual understanding quickly possible, and that yet shall not bias the mind or make future changes and reversals of meaning necessary. The scientific world is now in a tangle of absurd misunderstanding as to the meanings of the terms ptomaïne, leucomaïne, toxalbumin, toxin, etc., all because the early nomenclature falsely presupposed certain questions of etiology, etc., as scientifically settled. Our naming of new facts should be as loose and large—as colorless and pliant as possible. The nomenclature should not enslave the facts or be inconsistent with new facts that may in time upset old theories. Had this rule been followed, it would not be true, as it now is, that a ptomaïne may be a leucomaïne, and *vice versa*; that a toxalbumin may not be an albumin at all, etc. (See editorial, THE MEDICAL NEWS, July 18, 1891.)

It may be said that the best way to avoid the trouble about the words *infection* and *contagion* is to drop one of them. The rub is that words refuse to die or to be born and live according to any dictum. The best-formed and most-needed of words will come into the world still-born, and all

the labors of the philologic doctors with artificial respiration cannot bring about natural respiration. Conversely, the most execrable of philologic hybrids and teratologic absurdities will live and grow despite all attempts at asphyxiation and overlaying. The best we can hope to do in the latter case is to educate the youngster. As regards the two words under discussion, it appears like a case of rival twins competing for the right of primogeniture.

Etymologically the word *contagion* implies contact, touching, physical taking by one person from another of the *materies morbi*. But, of course, even that act may have a multitude of methods and degrees, and when a closer scrutiny is attempted there is found to be no essential difference between receiving the pathogenic matter from another by touching him, or the things that he has touched, and the transfer of the matter by a fly, by water, or by wind. The innumerable methods whereby the pathogenic material may be carried make it impossible to devise a nomenclature that shall express each variety of transfer. And yet it is precisely this idea of the method of transfer that has introduced the confusion complained of, and that makes it desirable to delimit the significations of the two words.

So far as we have now reached, it becomes most desirable to determine whether pathogenic material may be transported by the air or not. In the prophylaxis of disease this is an extremely important point. If, *e.g.*, pathogenic material may be transmitted through the air it is of the greatest importance to know the fact; but if not, then preventive measures are more easily instituted and made effective.

The word *infection* is, etymologically, not rigidly physical in its significance, and, in actual usage as well as in figurative meaning, it has the significance of more subtle and mysterious processes than those of the physical contact implied by the word *contagious*. May we not act upon this hint and conveniently limit the word *contagion* to those germs or that material not transportable by the atmosphere, and *infection* to that material that lives and is conveyed by aerial currents? Such a practice would permit both words to be used, but would give to each a distinct province and application, and thus avoid the present misunderstanding and confusion. Typhoid fever (unless the germs are later to be proved conveyable by air-currents) would thus

be a contagious, but not an infectious, disease; ague would be infectious, but not contagious; while tuberculosis would be both contagious and infectious, etc.

The objection to this suggestion that arises is that we are left without a generic term applicable to all diseases whether contagious or infectious. But, zymotic is such a word, with the widest significance and correctness of application.

Without some such limitation and definition as the foregoing we shall have to drift on, with the three words contagious, infectious, and zymotic, indiscriminately used, erroneously supposed to have differences of meaning, and giving rise to constant misunderstanding and mystification.

TWO METHODS.

To a physician of Philadelphia, widely known and greatly honored, an enterprising firm of dealers in wine lately sent a most lavish and costly case of "samples" of their "medicinal" beverages. The enterprising firm was thanked, and politely informed that the present had been re-presented to ——— Hospital.

Another physician writes an effusive and laudatory letter in praise of the wine, as regards its prophylactic and curative properties in disease, and this letter will doubtless be poked under the nose of every one of us for years to come.

In certifying to the superior excellences of one special preparation, it goes without saying that as a scientific man the physician has made impartial scientific analysis and tests of all competing preparations of the kind, and chemically, physiologically, and therapeutically is disinterestedly certain that the one he pronounces the best is really so. If he has not done so his certificate is a farce and he has unjustly discriminated against other preparations, possibly equally as good, the makers of which trust to the qualities of the preparations rather than to sly advertising dodges. But whatever the fact, either he has been foolish enough to give a valuable thing for nothing, or he has had value received for the puff.

SELECTION.

OUT-PATIENT REFORM.

THE Great Northern Central Hospital, on establishing its new buildings in the center of the northern districts of London, found it necessary to rid its out-patient department of some of the evils that are usu-

ally comprised under the name of "hospital abuse." These evils, briefly stated, consist in the overcrowding of the departments, and in the presence among the patients of (1) persons whose position and weekly earnings render them well able to pay for treatment at their own homes; (2) persons who are suffering from chronic and trivial ailments; and (3) persons who, being members of clubs or of provident dispensaries, are already provided with means of medical aid in case of sickness. To eliminate these component parts of the crowd and to relegate them to their respective positions has been the aim of many schemes of out-patient reform in London as well as in some of the large towns in the United Kingdom. The experience thus gained has abundantly illustrated the truth of the saying that men cannot be made moral by Act of Parliament. No system has yet been devised that, depending for its success on the good feeling or the moral sense of the masses, has as yet fully achieved its object. The Great Northern Hospital system has been so framed as to be, for the most part, independent of the moral obliquity of individuals. It consists essentially of a system of inquiry into the circumstances of all applicants for relief and the refusal of all that exceed a definite wage limit laid down by the hospital authorities. All cases are further made to pass through the hands of a qualified casualty officer, who is required to be a resident in the neighborhood of the hospital, and by him the trivial cases are separated from the cases of real disease or injury. No case is, refused first aid, but all cases refused further treatment under the wage limit are offered a form of certificate that, if they can get signed by their own physician, entitles them at their next visit to be registered as regular out-patients. The working of the scheme is controlled by a mixed medical and lay subcommittee that is responsible for all of the acts of the inquiry and casualty officers. In any case of doubt as to the truth of a patient's statements the subcommittee is empowered to institute inquiries at the patients' own homes. The objects of the Great Northern Hospital Committee have thus been threefold. While protecting the funds of the hospital from misapplication, it has also borne in mind the interests of the local practitioners, and has further rendered the labors of its own honorary medical officers less onerous and more effective by the system of preliminary medical inspection. The patients themselves receive treatment in accordance with their requirements, and although the scheme may be objectionable in the eyes of the few upon whom it operates, it would appear to be popular with those whom it protects. It is worthy of note that a form of voluntary pay system was for a long time in vogue at the Great Northern Hospital, and that it failed signally to check the ordinary forms of abuse. The practitioners in the neighborhood of the hospital rose up in arms against it, and at the instance of its own medical officers the committee withdrew it. Pay systems, as established at Guy's Hospital, the Queen's Hospital, Birmingham, and elsewhere, whether accompanied by inquiry, or whether put on the same footing as at the provident dispensaries, are, and must be, liable to abuse. Rigid and regulated inquiry would seem to be the only effective means of detecting such abuse, but unless universally adopted will only have the effect of driving unscrupulous persons from one institution to

another. Combined action, as attempted among certain of the Manchester medical charities, or by the agency of the Charity Organization Society, would probably prove the most economical method, but it is open to question whether the more effective results would not be obtained if every hospital protected its own interests as the Great Northern Hospital has done.—*Brit. Med. Journ.*

REVIEWS.

PHYSICAL DIAGNOSIS. A GUIDE TO METHODS OF CLINICAL INVESTIGATION. By G. A. GIBSON, M.D., D.Sc., F.R.C.P. Ed., Lecturer on the Principles and Practice of Medicine in the Edinburgh Medical School, etc., and WILLIAM RUSSELL, M.D., F.R.C.P. Ed., Pathologist to the Royal Infirmary of Edinburgh, etc. With one hundred and one illustrations. 8vo, pp. 376. New York: D. Appleton & Co., 1891.

THE importance of diagnosis in the practice of medicine is amply testified to by the large number of books on the subject, of which there are many that are good. The diagnosis of disease is a most interesting subject, calling into play, as it does, the highest intellectual activity in conjunction with the broadest knowledge, in the face of which conditions apparently complex become reduced to their elementary simplicity. Based upon definite principles and accumulated observation, it is an exact study, attainment of proficiency in which depends upon careful training and unlimited experience.

Diagnosis depends upon a correlation of the physical signs and the symptoms. Careless observation or false reasoning may each lead to wrong conclusions. To prevent such untoward consequences the student should be instructed in the best methods of conducting clinical investigation, and he should understand the significance and the mechanism of the results of such investigation. The book of Dr. Gibson and Dr. Russell is well calculated to meet the indications. It is clearly written, in an easy and agreeable style. Well-executed illustrations are introduced when necessary to elucidate or to amplify the text. It is only natural that here and there statements are made that will not find universal acceptance, that certain information is presented that it might be thought were well omitted, and that other facts are omitted that it may be thought it were better to have presented. It is stated that the precordia is normally slightly bulged as compared with the corresponding part of the thorax on the right side. We have found it far from usual that the precordia bulged appreciably, even in cases of hypertrophy of the heart. We are glad to see it stated, without qualification, that a mitral systolic murmur may occur "when there is no disease of the valve, but when the ventricle is dilated and enfeebled; then either the orifice is dilated, so that the cusps are to small too close it, or the muscle, owing to weak action, does not sufficiently contract the orifice to enable the valve to close it." To say that "in many cases of mitral stenosis, neither a diastolic nor a presystolic murmur is present, and yet the diagnosis may be made with practically absolute certainty" is to make rather a positive assertion the acceptance of which will depend upon post-mortem confirmation. Less than five pages are devoted to a consideration of the blood. The

differential characteristics of the blood in anemia, chlorosis, pernicious anemia, leukemia, and pseudo-leukemia are not given. Among the microparasites of the blood the malarial organism is not mentioned. The chapter devoted to the urinary system is good and full, but no reference is made to the reaction of the urine in case of enteric fever to sulphanilic acid and sodium nitrite.

On the whole, the book can be safely entrusted to the hands of the student with the assurance that it will prove of real service.

PULMONARY TUBERCULOSIS, ETIOLOGICAL AND THERAPEUTIC. BASED ON AN EXPERIMENTAL INVESTIGATION. By R. W. PHILIP, M.A., M.D., F.R.S.E. 8vo, pp. 55. Edinburgh and London: Young J. Pentland, 1891.

THE observations upon which this essay is based were begun in 1885. Premising his investigations by accepting the etiologic agency of the bacillus tuberculosis, Philip found that subcutaneous injections of an alcoholic extract of the pure sputum of unequivocal cases of pulmonary tuberculosis into cold-blooded and warm-blooded animals were invariably followed by symptoms of depression of the voluntary motor system, anorexia, and wasting, the action of the heart being slowed, with relative prolongation of the diastole. By the administration of atropine the effects of the injections were completely neutralized.

For therapeutic purposes pulmonary tuberculosis is divided into three stages: 1, a catarrhal or pretuberculous stage; 2, the stage of invasion, and 3, the stage of elaboration and absorption. In the first stage, the treatment must be prophylactic; especially is pulmonary exercise to be encouraged. In the second stage the treatment must be tonic and constructive; it is not necessary to attempt the destruction of the tubercle-bacillus; it suffices to render the soil unfavorable for its development. For this purpose "the group of bodies represented by eucalyptol, turpentine, terebene, copaiba (and perhaps creasote)," has proved useful. For two or three years Philip has advantageously employed pure oil of eucalyptus globulus, from ten to thirty minims, three or four times a day, conjoined with intra-tracheal injections of from a twenty to thirty per cent. solution of eucalyptus oil in olive oil or other bland menstruum. In the third stage of the disease, belladonna, or its alkaloid atropine, pushed to its physiologic effects, is indicated and has yielded satisfactory results.

PRESCRIBER'S PHARMACOPEIA. A SYNOPSIS OF THE MORE RECENT REMEDIES, OFFICIAL AND UNOFFICIAL, WITH A THERAPEUTIC INDEX AND A RÉSUMÉ OF THE B. P. ADDITIONS, 1890. By a Member of the Pharmaceutical Society of Great Britain. Second Edition (revised reprint). Pp. 429. Bombay: Kemp & Co., Limited, 1891.

THIS booklet is a creditable compilation of the medicinal agents in more common and universal employ. It is based principally upon the British Pharmacopeia, though it contains not only preparations to be found in the British Pharmacopeia but also many recognized by the Indian, the German, and the United States Pharma-

copeias, as well as articles that have not received official recognition. The names of medicaments are arranged alphabetically. The qualities and properties, as well as the therapeutic indications of the representative of a class or of individual members of a class are presented, together with the chemical symbols or formulæ, the dosage, and in suitable cases with the antidotes and the incompatibles. An appendix contains the recent additions to the British Pharmacopeia and a consideration of the subjects of hypodermatic medication, pills, and urinalysis; it also contains other tests, a therapeutic index and a general index.

We are disposed to adhere to the standard works on materia medica and therapeutics, but we must admit that books like this Pharmacopeia possess a certain value in bridging over a period until new editions of standard works to conform to pharmacologic and pharmaceutic advance can be prepared. The completeness of the book and the evidence of carefulness it presents are praiseworthy.

TABLES FOR DOCTOR AND DRUGGIST. (Comprising: I. Table of Solubilities. II. Table of Reactions and Incompatibles. III. Table of Doses and Uses of Medicines. IV. Table of Specific Gravities. V. Table of Poisons and their Antidotes.) Compiled by ELI H. LONG, M.D., Professor of Materia Medica, Buffalo College of Pharmacy; Adjunct Professor of Materia Medica, Medical Department, University of Buffalo. Detroit: George S. Davis, 1891.

THIS is one of the most useful reference books which has come into our hands. The object of the compilation, which, as stated in the preface, is "to bring into convenient form for ready reference information that is wanted daily by the physician and pharmacist," has been admirably carried out. The Table of Reactions and Incompatibles constitutes the distinctive feature of the work. "It is not intended to be a technical guide for the chemist, but is arranged rather with a view to the practical needs of the practitioner." The Table of Doses and Uses is quite complete, and, so far as appears upon casual perusal, correct. The Table of Poisons and their Antidotes is also worthy of commendation; it is much fuller than the usual run of such tables. We regret to note, however, a number of serious omissions in the list of antidotes. Atropine and magnesium sulphate are both omitted from the list of antidotes of carbolic acid; amyl nitrite is not found in the memorandum of treatment of carbolic acid poisoning. In the treatment of strychnine poisoning, the importance of quiet and of the evacuation of the bladder has been forgotten. Nitrite of amyl might also well have been mentioned here.

MANUAL OF PHYSICAL DIAGNOSIS FOR THE USE OF STUDENTS AND PHYSICIANS. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the University Hospital, etc. 8vo., pp. 136. Philadelphia: P. Blakiston, Son & Co., 1891.

DR. TYSON has disarmed criticism as to the necessity for a new work on physical diagnosis by giving expression in his preface to the hope that his book may facilitate the teaching of the subject to his classes—and

this object the book is admirably calculated to fulfil. The work contains a clear and concise description of the various phenomena elicited by physical exploration of the lungs and heart, in health and disease, based upon the results of a large and extended experience, during many years, in the employment of approved methods, and in the trial of proposed innovations. It is, however, to be regretted that a portion of the work was not devoted to a consideration of the information concerning diseases of the liver, spleen, kidneys, and other abdominal viscera to be gained by physical investigation. The results derived from physical exploration of the abdominal viscera are small as compared with those derived from physical exploration of the thoracic organs, partly because both subjects have not received the same degree of attention. The very obscurity of diseases of the abdomen should constitute a stimulus for the enlargement of our knowledge of the phenomena to be elicited by physical examination, and of the significance of those phenomena, so as to render more easy the recognition of those diseases.

DIAGNOSIS AND TREATMENT OF HEMORRHOIDS AND OTHER NON-MALIGNANT RECTAL DISEASES. By W. P. AGNEW, M.D. Second Edition. Pp. 148. San Francisco, California: R. R. Patterson, 1891.

IN addition to a consideration of the subject of hemorrhoids, to which this little work is largely devoted, the following subjects are briefly discussed *seriatim*: Rectal examinations, fistula in ano, ulcer, stricture, fissure and prolapse of the rectum, rectal pockets and papillæ, pruritus ani, divulsion of the sphincter ani, rectal polypi, proctitis, flushing the colon, reflex manifestations of rectal disease, condylomata, and neuralgia of the rectum. In an appendix, carbolic acid, cocaine, and the aspiration of hemorrhoids, are cursorily considered, and a few formulæ are added. The author is an advocate of the treatment of hemorrhoids by means of injections of carbolic acid. He employs a formula containing four drams of tannic acid carefully dissolved in an ounce of glycerin. To the solution two drams each of salicylic acid and sodium bichlorate are added. If there be any sediment the solution should be strained. Then to half an ounce of crystallized carbolic acid, liquefied by the addition of fifteen minims of distilled water, sufficient of the solution first prepared is added to make two ounces. From three to four minims are injected, in accordance with the size of the hemorrhoids.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Sixth Session, held at Washington, D. C., September 22, 23, 24, and 25, 1891. Volume VI. 8vo., pp. 319. Philadelphia: Printed for the Association, 1891.

As the readers of THE NEWS have already been presented with a full report of the proceedings of the sixth session of the Association of American Physicians, and have had an opportunity of reading so many of the papers contained in the *Transactions*, extended review is uncalled for. We dare only refer to the beautiful tribute to Leidy made by the President in his opening address; to the original paper of Roosevelt on "The Frequency of the Localization of Phthisis Pulmon-

alis in the Upper Lobes;" to the advanced position taken by Delafield in suggesting a rational nomenclature for the "Diseases of the Kidney, Popularly Called Bright's Disease;" to the scholarly papers on "Arterial Disease," by Peabody and by Councilman; to the classical essay of Fitz on "Intestinal Perforation in Typhoid Fever." The *Transactions*, as a whole, reflects credit upon the Association.

MANUAL OF CHEMISTRY. A GUIDE TO LECTURES AND LABORATORY WORK FOR BEGINNERS IN CHEMISTRY. A Text-book Specially Adapted for Students of Pharmacy and Medicine. By W. SIMON, Ph.D., M.D., etc. Third Edition. Philadelphia: Lea Brothers & Co., 1891.

AMONG the many works on chemistry offered for the use of the medical student, there is probably none that outrivals Dr. Simon's work in practical arrangement and thoroughness. A special feature of the book, and one that deserves the greatest praise, is the presence therein of the beautiful colored plates representing fifty-six chemical reactions. To say that they are splendidly and artistically executed hardly does them justice. They must convey to the mind of the student lasting impressions of the color-changes that he has noted in his experiments in the laboratory, and the perusal of this work must recall them vividly to recognition. The many cuts are well selected, and the make-up of the book leaves nothing to be desired. As a student's manual this work is of the highest order.

THE PHYSICIAN AS A BUSINESS MAN; OR, HOW TO OBTAIN THE BEST FINANCIAL RESULTS IN THE PRACTICE OF MEDICINE. By J. J. TAYLOR, M.D. Pp. 144. Philadelphia: The Medical World, 1891.

DR. TAYLOR has admirably presented the commercial obligation of the community to the practitioner of medicine, and in so doing he has not failed to show the dereliction of the community. The subject is a well-worn one; it is none the less a live issue. The physician holds a unique position. As his relations to his clients are confidential, so does he depend upon the honor of those clients to grant him proper remuneration. To derive a proper inspiration for his work, the physician must be an optimist. He is a poor business man, if striving for gain at the expense of others constitutes good business. Dr. Taylor has indicated some of the ways in which the physician can protect himself against deception and imposition, he has laid down certain general business principles with which physicians should be familiar or which they can advantageously follow. The book can be profitably read by physicians and others.

THE RATIONAL CURE OF DEAFNESS AND DISCHARGE FROM THE EAR. By SAMUEL SEXTON, M.D., assisted by ALEXANDER DUANE, M.D. 8vo., pp. 89. New York: J. H. Vail & Co., 1891.

THIS brochure sets forth most satisfactorily the "modern treatment for the radical cure of deafness, otorrhea, noises in the head, vertigo, and distress in the ear." This treatment consists in excision of the membrana tympani and the two larger ossicula, stiffened and

ankylosed as they are in chronic catarrh of the middle ear, and excision of the diseased remnants of the membrana and necrotic ossicles in chronic purulent otitis media. This operation is new in aural surgery, and brings about good results in cases heretofore considered irremediable. We hail the brochure that explains it as a beacon-light, piercing the fog that has so long hung about these two aural diseases. Dr. Sexton deserves great praise for his labors in this operation of excision of the membrana tympani, and the thanks of the aurist for the valuable hints contained in this little work.

A MANUAL OF GENERAL PATHOLOGY AND MORBID ANATOMY. By H. N. HALL, Ph.G., M.D., Lecturer on Pathology, Post-Graduate Medical School, Chicago. 8vo, pp. 188. Chicago: Rand, McNally & Co., 1891.

THIS book is one of a class that cannot be too severely condemned. Not only is it entirely inadequate for the needs of the beginner, but it is characterized by defects and imperfections of statement that render it unsafe as a text-book or as a compend. Every page of the work bears evidence of gross carelessness, while errors of orthography occur without limit.

In both English and foreign languages there are good books on pathology and morbid anatomy of which the student can with confidence and advantage avail himself. It is no drawback that they are not abbreviated to the point of uselessness. The student of to-day at best does not read enough, and is thus untrained for independent thought.

THE SUPREME PASSIONS OF MAN; OR, THE ORIGIN, CAUSES, AND TENDENCIES OF THE PASSIONS OF THE FLESH. By PAUL PAQUIN, M.D. 8vo, pp. 150. Battle Creek, Mich.: The Little Blue Book Co., 1891.

DR. PAQUIN defines appetite as natural desire; passion as abnormal appetite; while vice is practically the satisfaction of passion. All depend upon stimuli, and each is developed respectively in accordance with the character and in proportion to the intensity of the stimulus. The most prolific as well as the most universal source of abnormal stimulation resides in immoderate living—over-indulgence in animal food, with deficient activity. The recognition of the cause gives the remedy. Dr. Paquin has zealously presented certain truths the general recognition of which, together with the application of the remedial measures to be deduced, could only inure to the common good.

AGE OF THE DOMESTIC ANIMALS. A COMPLETE TREATISE ON THE DENTITION OF THE HORSE, OX, SHEEP, HOG, AND DOG; AND ON VARIOUS OTHER MEANS OF DETERMINING THE AGE OF ANIMALS. By RUSH SHIPPEN HUIDEKOPER, M.D. Illustrated with 200 engravings. Philadelphia: F. A. Davis, 1891.

THIS is a work of both scientific and practical value. Dr. Huidekoper has succeeded in making a book that is concise without neglecting important subjects. Depending principally on the teeth as an indication of the age of the animal, the author has tabulated the development and eruption of these structures in such a way as to make this information of much practical value to

veterinary surgeons. He has also given other indications of the ages of animals. The work is fully illustrated.

RECORD-BOOK FOR PHYSICIANS AND TRAINED NURSES.
By L. O. VAN RIPER. Chicago.

THIS Record-book is made of about 100 pages, each of which contains columns for the registry of the temperature, pulse, respiration, the number of bowel movements, the frequency of micturition, the color and quantity of the urine, and the medicament, the stimulants, and the nourishment directed, as well as special instructions for every hour of the day.

CORRESPONDENCE.

THE TREATMENT OF INFLUENZA AMONG THE POOR.

To the Editor of THE MEDICAL NEWS,

SIR: Although numerous articles on the treatment of influenza or "la grippe" have appeared and continue to appear, I feel justified in presenting this communication, by reason of the successful treatment of sixty-five cases within a month among the poor, without the use of any of the new coal-tar products.

It is too much the custom among physicians to use indiscriminately every new remedy proposed.

My experience with phenacetin, antipyrin, and other of the recently introduced coal-tar products, leads me to believe that they are all more or less depressing, especially if administered to patients in whom the vitality is already lowered, such as are found among the poor. Having, therefore, abandoned the new drugs, I took refuge in quinine.

Between December 24, 1891, and January 24, 1892, I treated sixty-five patients suffering with "la grippe" and its complications. Most were cigarmakers. Twenty-eight, or nearly 42 per cent., were males; thirty-seven, or nearly 58 per cent., were females; thirteen, or nearly 20 per cent., had bronchitis; four, or nearly 8 per cent., had tonsillitis; eighteen, or nearly 28 per cent., presented severe cerebral and gastric disturbance. Nine cases were in children, all presenting catarrhal symptoms.

All were treated by the administration of quinine suspended in syrup of yerba santa. In cases marked by catarrhal phenomena, I gave the sulphate. When tonsillitis existed I gave the salicylate combined with eucalyptol. When cerebral manifestations were prominent, I gave the hydrochlorate with caffeine. In cases of gastric type I dissolved the quinine in liquor pepsi, and added compound tincture of cardamom. There were no deaths. All were able to resume their work in from four to fourteen days. As a rule, I restricted the diet to hot milk.

The most serious objection to using syrup of yerba santa is that most pharmacists keep on hand only the fluid extract, with which they extemporaneously mix syrup so that the resin is thrown down. The best method of preparing the syrup is to rub the fluid extract up with granulated sugar in a mortar, adding magnesia, then water, constantly stirring and filtering. Prepared in this way the syrup has all of its resinous mat-

ters finely suspended, while any bad taste is entirely covered.

Very truly yours,

JOS. F. CHMELICEK, M.D.

309 EAST SEVENTY-SECOND STREET, NEW YORK.

DISTANT ACTION OF GLYCERIN IN SUPPOSITORIES, ETC.

To the Editor of THE MEDICAL NEWS,

SIR: My object in relating the following case is to try to throw some light upon the subject of the action of glycerin upon the bowels, the instance given seeming to show that the laxative effect of a glycerin suppository or enema is not confined to the parts with which it is brought in contact.

Mrs. —, aged forty, a multipara, had carcinoma of the fundus of the uterus for more than one year, and during the last three months of her life all her alvine discharges were passed through the uterus and vagina. Neither cathartics nor enemata produced any fecal discharge from the rectum.

On one occasion, when she became uncomfortable from accumulation and hardening of the discharge, I introduced a large glycerin suppository into the rectum. Within half an hour it produced a copious and semi-fluid stool through the uterus and vagina, but no discharge whatever from the rectum.

I subsequently had the privilege of an autopsy, Dr. Theodore H. Seyfert assisting me. We found that the diseased fundus of the uterus had become adherent to, and ulcerated into the narrowed colon at its sigmoid flexure, almost severing the continuity, and detaching the mucous lining of the colon from that of the rectum, and totally obstructing the upper end of the latter by organized deposits.

As far as one instance can, this one appears to prove that the effect of the glycerin, though originating in the rectum, is not confined to it.

HORACE Y. EVANS.

PHILADELPHIA.

"A NEW SUTURE."

To the Editor of THE MEDICAL NEWS,

SIR: Referring to the "Description of a New Suture" on page 103 of THE MEDICAL NEWS for January 23, 1892, I beg to call your attention to the fact that in September, 1889, I read before the Philadelphia Obstetrical Society a paper on "An Easy Method of Repairing the Perineum" (published, with illustrations, in the *Annals of Gynecology*, October, 1889), in which I described a suture almost identical with that described in THE NEWS. I have used this mode of suturing since 1881, but did not claim it as *new*, believing it to be only a modification and improvement on the old-fashioned quill suture.

Yours truly,

JOHN C. DA COSTA, M.D.

NEWS ITEMS.

The Eleventh German Congress of Internal Medicine will be held at Leipzig from April 20th to 23d, under the presidency of Curschmann. Biermer, of Breslau, and Ehrlich, of Berlin, will discuss Grave Anemic Condi-

tions; Rosénstein, of Leyden, and Stadelmann, of Dorpat, will discuss Chronic Hepatitis. Other papers will be presented as follows: The Cause of Immunity and the Cure of Infectious Diseases, by Emmerich, of Munich; Uremia, by Peiper, of Greifswald; The Results of Removing Large Portions of the Spinal Cord (a report on observations made on dogs by Goltz and Ewald), by Goltz, of Strasburg; The Recognition of So-called Hepatic Colic, and of Pseudo-gallstones, by Fürbinger, of Berlin; Further Communications on Diabetes Mellitus Consecutive to Extirpation of the Pancreas, by Minkowski, of Strasburg; Treatment of Carcinoma, by Adamkiewicz, of Cracow; The Different Forms of Pneumonia, by Finkler, of Bonn; The Therapeutic Value of Blood-transfusion in the Human Subject, by Landois, of Greifswald; The Cure of Tuberculosis and the Biology of the Tubercle-bacillus, by Klebs, of Zurich; The Causes of Immunity and Cure, Especially in Pneumonia, by Klemperer, of Berlin, and Klemperer, of Strasburg; Immunity Against Infectious Diseases, by Buchner, of Munich. Gerhardt, Ebstein, and Von Jaksch have also promised communications.

An Army Medical Board will be in session in New York City, N. Y., during April, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before April 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C., DR. C. SUTHERLAND.

Rush Medical College.—A *concours* will be held at Rush Medical College, beginning Tuesday evening, March 1st, for the purpose of filling the positions of Lecturer on Anatomy and Lecturer on Materia Medica and Therapeutics in the spring faculty.

The spring course begins March 31st, directly after the close of the regular term, and continues two months, with a class of from 250 to 300 students.

It is the policy of the College, so far as practicable, to fill vacancies in the regular faculty from the corps of spring instructors. Nine of the present members of the regular faculty have been selected in this way.

The *concours* will consist of twenty-minute lectures by each of the applicants, before the faculty, students, and local profession, upon subjects pertaining to their respective branches, to be indicated by the Professor of Anatomy and the Professor of Materia Medica and Therapeutics a week before the contest.

An Orthopedic Department at the Philadelphia Hospital.—At a recent meeting of the Bureau of Charities a communication from Dr. H. Augustus Wilson was received proposing the establishment of an Orthopedic Department at the Philadelphia Hospital. The subject was referred to the Medical Board.

An International Gynecologic and Obstetric Congress will be held at Brussels in September of the present year. The following subjects will receive special discussion: Pelvic Suppuration, to be opened by Segond, of Paris; Extra-uterine Pregnancy, by Martin, of Berlin; Placenta Previa, by Hart, of Edinburgh.

Cremation.—A crematory is to be erected in the Berlin City Cemetery, which it is intended shall be superior to any in Europe.

BOOKS AND PAMPHLETS RECEIVED.

Dental Infirmary Patients; the Use and Abuse of Dental Charity. By Richard Grady, M.D., D.D.S. Reprint, 1891.

Diseases of the Bladder and Prostate. By Hal C. Wyman, M.Sc., M.D. Detroit, Mich.: George S. Davis, 1891.

Contribution à l'Étude du Sarcome de la Parotide. Par Luis Rodriguez. Paris: G. Steinheil, Editeur, 1890.

Transactions of the American Gynecological Society, Vol. XVI, for the Year 1891. Philadelphia: Wm. J. Dornan, 1891.

Syphilis in Ancient and Prehistoric Times. By Dr. F. Buret, of Paris, France. Translated from the French, with Notes, by A. H. Ohmann-Dumesnil, M.D. No. 12, Physicians' and Students' Ready-reference Series. Philadelphia and London: F. A. Davis, 1891.

Consumption: How to Prevent It, and How to Live With It. By N. S. Davis, Jr., A.M., M.D. Philadelphia and London: F. A. Davis, 1891.

The Chinese: Their Present and Future—Medical, Political, and Social. By Robert Coltman, Jr., M.D. Illustrated. Philadelphia and London: F. A. Davis, 1891.

Water as a Local Anesthetic. By Robert H. M. Dawbarn, M.D. Reprint, 1891.

Medical Hemorrhage Surgically Treated, with a Successful Case by a New Technique of Saline Infusion for Severe Hemorrhage. By Robert H. M. Dawbarn, M.D. Reprint, 1891.

The Action and Application of the Faradic Current in Gynecology. By Augustin H. Goelet, M.D. Reprint, 1891.

Trachoma and Its Treatment. By W. Cheatham, M.D. Reprint, 1891.

Seventh Annual Report of the Adirondack Cottage Sanitarium, Saranac Lake, November, 1891.

Traumatic Neuroses in Damage Suits. By Howell T. Pershing, M.Sc., M.D. Reprint, 1891.

Remarks Introductory to a Discussion on Acute Diffuse Peritonitis. By A. L. Carroll, M.D. Reprint, 1891.

The Temperature in Acute Primary Pneumonia of Children and the Diagnosis of Acute Broncho-pneumonia from Bronchitis. By L. Emmett Holt, M.D. Reprint, 1891.

Stricture of the Rectum. By Charles B. Kelsey, M.D. Second Edition, enlarged. New York, 1891.

What Can be Done in Cerebral Surgery. By Emory Lanphear, M.D., Ph.D. Pamphlet. Kansas City, Mo., 1891.

De la Chloroformisation à Doses et Continues. Par le Dr. Marcel Baudoin. Extrait de la Gazette Hôpitaux. Paris: Aux Bureaux de la Revue des Sciences Naturelles de l'Ouest, 1892.

Essentials of Medical Physics. By Fred. J. Brockway, M.D. Philadelphia: W. B. Saunders, 1892.

Essentials of Medical Electricity. By D. D. Stewart, M.D., and E. S. Lawrence, M.D. Philadelphia: W. B. Saunders, 1892.

Physical Diagnosis: A Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P. Edin., and William Russell, M.D., F.R.C.P. Edin. New York: D. Appleton & Co., 1891.